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TRANSACTIONS

OF THE

National Association of United States Pension Examining Surgeons

SECOND ANNUAL MEETING

Washington, D. C.

May 13 and 14, 1903

Including an Account of First Meeting, at Saratoga Springs June 9, 1902

VOL. I

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Dr. E. T. Lashells	Meadville, Pa.
Dr. E. D. Laughlin	Orleans, Ind.
Dr. David H. Law	Dixon, Ill.
Dr. G. Law	Greeley, Col.
Dr. L. J. Leamy	Philadelphia, Pa.
Dr. W. W. Leech	Apollo, Pa.
Dr. Edward C. Lemen	Upper Alton, Ill.
Dr. C. Lenker	Schuylkill Haven, Pa.
Dr. I. R. Le Sage	Huntington, W. Va.
Dr. A. Lewis	Greenville, Ky.
Dr. G. Griffin Lewis	Syracuse, N. Y.
Dr. G. W. Libby	Spokane, Wash.
Dr. L. R. Light	Jonestown, Pa.
Dr. H. C. Lindersmith	Sherwood, O.
Dr. Laban Lindley	Paoli, Ind.
Dr. J. J. Lindsay	Manchester, Iowa
Dr. C. H. Linn	Kuttawa, Ky.
Dr. David Little	162 Plymouth Ave., Rochester, N.Y.
Dr. H. F. Livingston	Yankton, S. D.
Dr. O. Logan	Girard, Pa.
*Dr. W. A. Long	Frederick, Md.
*Dr. M. J. Longsworth	St. Marys, O.
Dr. E. H. Loughran	Kingston, N. Y.
*Dr. J. M. Louther	Somerset, Pa.
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Dr. J. W. Lowe	Mentor, O.
Dr. O. F. Lowry	Cambridge, O.
Dr. Jos. F. C. Luhan	220 E. 72d St., New York, N. Y.
Dr. W. J. Lumsden	Elizabeth City, N. C.
Dr. Z. J. Lusk	Warsaw, N. Y.
Dr. E. H. Lyford	Vinalhaven, Me.
Dr. Wm. Lynch	Greenville, O.

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Dr. James Macready	Monroe, O.
Dr. Frank Madden	Plattsburg, N. Y.
Dr. J. T. Main	Jackson, Mich.
Dr. M. P. Malcolm	Lewiston, W. Va.
Dr. H. P. Mansfield	Ridgefield, Conn.
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Dr. James H. McCall	Jackson, Tenn.
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Dr. J. B. McCook	396 Main St., Hartford, Conn.
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Dr. Marshall McDowell	Cynthiana, Ky.
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Dr. J. W. Murphy	Eagle Mills, O.
Dr. R. D. Murray	Key West, Fla.
Dr. A. J. Myersburg	102 Bradford St., Brooklyn, N.Y.

N

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Dr. J. R. Nankivill	Athens, Tenn.
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Dr. Wm. A. Nason	Algonquin, Ill.
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Dr. A. W. Nelson	New London, Conn.
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Dr. Arthur Noble	Winchester, Ohio
Dr. D. B. Northrup	San Diego, Cal.
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O

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P

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Dr. M. F. Patterson	Des Moines, Iowa
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Q

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Dr. G. W. Ralston	Evansville, Ind.
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Dr. E. C. Rankin	McLouth, Kan.
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Dr. P. L. Reichard	Allentown, Pa.

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Dr. Montgomery Russell	Seattle, Wash.
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S

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Dr. James F. Smith	Bath, Me.
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Dr. B. A. Souders	Winterset, O.
*Dr. R. V. Spackman	Dubois, Pa.
Dr. George Spafford	Cavendish, Vt.
Dr. James A. Spalding	627 Congress St., Portland, Me.
Dr. W. M. Spear	Rockland, Me.
Dr. G. J. Starnes	San Antonio, Tex.
Dr. James Stein	Scranton, Pa.
Dr. Wm. N. Stein	Shenandoah, Pa.
Dr. John Steinbach	Winona, Minn.
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Dr. Willis E. Sterrs	Decatur, Ala.
*Dr. C. L. Stevens	Athens, Pa.
Dr. Alexander S. Stewart	Hot Springs, S. D.
Dr. O. Stewart	Port Huron, Mich.
Dr. O. H. Stewart	Syria, Ind.
Dr. G. A. Stickney	Beverly, Mass.
Dr. H. L. Stickney	Newport, N. H.
Dr. F. M. Stiles	Hopkinsville, Ky.
Dr. Hamilton Stillson	8 Hinckley Block, Seattle, Wash.
*Dr. J. O. Stillson	445 N. Penn St., Indianapolis, Ind.
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Dr. O. C. Strong	Colden, N. Y.
Dr. E. R. Swinburne	Haeppner, Oregon
Dr. A. A. Swinton	Charlevoix, Mich.

T

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Dr. J. L. Taylor	Alton, Mo.
Dr. S. L. Taylor	558 Madison St., Brooklyn, N. Y.
Dr. J. J. Terhume	169 Adelphi St., Brooklyn, N. Y.
Dr. Frederick Terrell	San Antonio, Texas
*Dr. A. H. Thayer	Grafton, W. Va.
Dr. B. E. Thomas	111 S. Main St., St. Marys, Ohio
Dr. J. M. Thompson	1960 N. 5th St., Kansas City, Kan.
Dr. William Thurber	Miamisburg, O.
Dr. Chas. L. Tisdale	Alameda, Cal.
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Dr. A. M. Tracy	410 Union St., Hudson, N. Y.
Dr. C. E. Trimble	Crestline, O.
Dr. J. D. Tripp	Auburn, N. Y.
Dr. A. R. Tucker	Noblesville, Ind.
Dr. H. W. Tuttle	Adrian, Mo.
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Dr. B. E. Twitchell	Belleville, Ill.

U

*Dr. C. E. Underwood	Frankfort, Ky.

V

*Dr. John Van Rensselaer	2 Thomas Circle, Washington, D. C.
Dr. Wm. W. Vinnedge	Lafayette, Ind.

W

Dr. Emil Wahl	475 Grove St., Milwaukee, Wis.
Dr. J. E. Walker	Thomaston, Me.
Dr. Jackson H. Wall	Richland Center, Wis.
Dr. G. M. Wallace	Ormond, Fla.
Dr. J. S. Wallace	Brunswick, Mo.
Dr. Fay K. Wallar	Mt. Carmel, Ill.
Dr. J. H. Walling	Vinemount, Ala.
*Dr. H. B. Walter	Harrisburg, Pa.
Dr. John Walter	Lebanon, Pa.
Dr. Horace Wardner	Laporte, Ind.
Dr. Lyman Ware	Chicago, Ill.
Dr. M. D. Warren	Cabot, Vermont
Dr. J. B. Warwick	Lucasville, O.
Dr. Eugene Way	Dennisville, N. J.

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Dr. P. W. Welker	Alliance, Ohio
*Dr. J. R. Wellington	1706 Rhode Island Ave., Washington, [D. C.
Dr. T. Wertz	Evansville, Ind.
Dr. J. B. Wescott	Bath, Me.
Dr. John E. West	636 Ocean Ave., Jersey City, N. J.
Dr. Arthur B. Wetherill	Holyoke, Mass.
Dr. E. M. Whaley	Columbia, S. C.
Dr. E. H. Wheeler	Murphysboro, Ill.
*Dr. E. R. Wheeler	Spencer, Mass.
*Dr. H. H. Whitcomb	Norristown, Pa.
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Dr. P. P. White	Williamsville, Vt.
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Dr. Geo. W. Whitney	Auburn, N. Y.
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Dr. W. H. Whitted	Bloomington, Ind.
Dr. Frank Wickham	Corona, N. Y.
Dr. D. M. Wilcox	Lee, Mass.
Dr. E. B. Wiley	Grinnell, Iowa
Dr. E. M. Wiley	Lexington, Ky.
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Dr. Sim. M. Wilhite	Falkville, Ala.
Dr. E. S. Willard	Watertown, N. Y.
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Dr. M. C. Williams	Elizabethton, Tenn.
Dr. Thomas Williams	S. Jacksonville, Fla.
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Dr. Chas. Williamson	Washington, Kan.
Dr. J. T. Willis	Metropolis, Ill.
Dr. T. E. Wills	Potstown, Pa.
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Dr. Daniel C. Wilson	Maryville, Mo.
Dr. J. H. Wilson	Bellefontaine, O.
Dr. M. J. Wilson	Warsaw, N. Y.
*Dr. S. M. Wilson	Bridgeton, N. J.
Dr. Arthur Windsor	Poplar Bluff, Mo.
Dr. E. W. Witten	Oklahoma City, Okla.
Dr. J. E. Wood	Elizabeth City, N. C.
Dr. P. M. Wood	Jamaica, N. Y.
Dr. Horatio Woodbury	South Paris, Me.
Dr. D. S. Woodworth	Fitchburg, Mass.
Dr. S. P. Woodworth	Devall Bluff, Ark.
Dr. T. F. Woodworth	Kinderhook, N. Y.

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Dr. J. P. Worrell	208 Seventh St., Terra Haute, Ind.
Dr. J. B. Wright	Trenton, Mo.
Dr. J. H. Wright	New Lexington, O.
Dr. J. W. Wright	141 E. Long St., Columbus, O.

Y

Dr. F. H. Yarnall	W. Lafayette, O.
Dr. A. L. Yocom	Chariton, Iowa
Dr. G. D. Yorke	Newark, N. Y.
Dr. L. J. Young	Haverhill, Mass.

Z

Dr. A. W. Zillman	Indian Grove, Mo.

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Hon. E. F. WARE, Commissioner of Pensions,
Dr. SAM HOUSTON, Medical Referee,
Dr. CHARLES F. WHITNEY, Assistant Medical Referee.

Dr. Horace Coleman,
Dr. George L. Fox,
Dr. Theodore Mead,
Dr. Joseph D. Morgan,
Dr. Walter W. Alleger,
Dr. William S. Bell,
Dr. Thomas W. Burke,
Dr. Patrick J. Byrne,
Dr. Herbert M. Camp,
Dr. Louis D. Carman,
Dr. John F. Collins,
Dr. Robert R. Cooke,
Dr. Augustus B. Coolidge,
Dr. George P. Du Bose,
Dr. Otis J. Eddy,
Dr. Thomas Featherstonhaugh,
Dr. Warren W. Foster,
Dr. William R. Frisbie,
Dr. Theodore F. Hance,
Dr. Addison S. Helton,
Dr. Horatio B. Hollifield,
Dr. Warner Holt,
Dr. Henry J. Hunt,
Dr. Thomas D. Ingram,
Dr. John F. Keenan,
Dr. James Laws,
Dr. Horace M. Lowe,
Dr. William C. Mason,
Dr. Patrick E. Nagle,
Dr. William M. Newell,
Dr. Francis A. Norman,
Dr. Charles E. O'Connor,
Dr. Thomas O'Reilly,
Dr. Alexis L. Pratt,
Dr. Jacob F. Raub,
Dr. John U. Raymond,
Dr. Thomas H. Sherwood,
Dr. John J. Shirley,
Dr. William C. Upham,
Dr. William H. H. Warman,
Dr. Lawrence Wilson,
Dr. Francis J. Woodman,
Dr. Patrick J. Gallagher,
Dr. Joshua R. Hayes,
Dr. Charles S. Rice,
Dr. Samuel G. Staples,
Dr. Frank D. Byington,
Dr. Joel T. Curry,
Dr. Henry L. Mann,
Dr. Frank E. Park,
Dr. Joseph Pospisiel,
Dr. Fred K. Swett,
Dr. Adelbert A. Taylor,
Dr. Edwin J. Richardson,
Dr. William W. Bennit,
Dr. William E. Brandt,
Dr. William H. Conner,
Dr. William A. Harries,
Dr. Charles S. Harrison,
Dr. James McKee,
Dr. Joseph Morrison,
Dr. Jeffrey C. O'Connell,
Dr. Robert M. Weedin,
Dr. Thaddeus P. Bell,
Dr. Arthur Jordan,
Dr. John W. Klemm,
Dr. Louis J. Perkins,
Dr. Arthur T. Randall,
Dr. Alexander S. Barger,
Dr. Charles H. Bowker,
Dr. Charles L. Boyd,
Dr. Thomas J. W. Brown,
Dr. Joseph G. Bulloch,
Dr. Nathaniel P. Butler,
Dr. Charles S. Capelle,
Dr. Henry F. Collins,
Dr. Wilmer E. Griffith,
Dr. Harry M. Hargrave,
Dr. Joseph T. D. Howard,
Dr. Thomas O. Klingner,
Dr. Edwin R. Lewis,
Dr. William E. McConville,
Dr. Thomas B. Miller,
Dr. Benjamin J. Read,
Dr. Charles A. Ulmer,
Dr. Clarence C. Walker,
Dr. Julian B. Woodson.

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CONSTITUTION.

ARTICLE I.

NAME.

The name of this Association shall be THE NATIONAL ASSOCIATION OF UNITED STATES PENSION EXAMINING SURGEONS.

ARTICLE II.

OBJECTS.

The objects of this Association shall be the improvement of those special branches of the science and art of medicine and surgery which are involved in the performance of the duties of Pension Examining Surgeons and the cultivation of cordial relations between the members.

ARTICLE III.

ADMISSION OF MEMBERS.

Any Pension Examining Surgeon wishing to become a member of this Association shall make written application to the Treasurer, accompanied by his dues, and at the annual meeting his name shall be referred to the Executive Committee, on whose favorable report as to his eligibility he shall be declared a member.

ARTICLE IV.

MEMBERS.

The members of this Association shall be of two classes, namely, active members and honorary members.

Active members shall be physicians who, at the time of their affiliation with the Association, are United States Pension Examining Surgeons in good standing. Active members alone shall have the right to vote and to hold office.

Honorary members, after having been proposed by the Executive Committee, may be elected by a two-thirds vote of the Association in annual meeting. Their number shall at no time exceed a proportion of one honorary to fifty active members.

ARTICLE V.

OFFICERS.

The officers of this Association shall be a President, a First, a Second, a Third and a Fourth Vice-President, a Secretary and a Treasurer.

ARTICLE VI.

ELECTION AND TERM OF OFFICERS.

The officers of this Association shall be elected annually, by ballot. They shall hold office for one year and until their successors are elected.

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ARTICLE VII.

DUTIES OF THE PRESIDENT.

The President shall preside at the meetings of the Association and of the Executive Committee, shall conduct the meetings in accordance with commonly accepted rules of parliamentary procedure, shall deliver, at the close of his term of office, an address before the Association, and shall perform such other duties as the Association may direct.

ARTICLE VIII.

DUTIES OF VICE-PRESIDENTS.

In the absence, or at the request of the President, a Vice-President, precedence according with numerical order, shall, at the annual meeting, assume the duties of the President.

ARTICLE IX.

DUTIES OF THE SECRETARY.

The Secretary shall keep the minutes of the Association, shall give due notice to the members of the time and place of the meetings, shall have charge of the publication of the transactions of the Association, shall submit a report at the annual meeting, and shall perform such other duties as may be directed by the Association.

ARTICLE X.

DUTIES OF THE TREASURER.

The Treasurer shall have custody of all funds of the Association, shall keep an accurate account of all receipts and disbursements, and shall present at the annual meeting a report on the finances of the Association.

ARTICLE XI.

EXECUTIVE COMMITTEE.

There shall be an Executive Committee of twelve, consisting of the President, the Secretary and the Treasurer as members *ex officio*, and nine appointed members.

ARTICLE XII.

DUTIES OF EXECUTIVE COMMITTEE.

The Executive Committee shall manage the affairs of the Association in the interim between annual meetings. It shall suggest to the Association at each annual meeting, the time and place for the next annual meeting. If, after the adjournment of the annual meeting, circumstances make it necessary to change the time and place of the next annual meeting, the Executive Committee shall have power to make such change. It shall also be the duty of the Executive Committee to present to the Association, at its annual meeting, a list of nominations for officers. If the Committee are not unanimous in favor of any nomination, the two names having the largest number of votes in the Committee shall be submitted to the Association.

In the interim between annual meetings a vote of the Executive Committee may be taken by mail when so requested by any three members of the Committee, the request to be transmitted to the President, who shall call for the vote.

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ARTICLE XIII.

TERM OF MEMBERS OF EXECUTIVE COMMITTEE.

The appointed members of the Executive Committee shall serve for three years, three being appointed by the incoming President each year.

ARTICLE XIV.

PROGRAM COMMITTEE.

There shall be a Committee of three, consisting of the President, the Secretary and the Treasurer to secure and pass upon papers to be read at the annual meeting.

ARTICLE XV.

DUES.

Each active member of this Association shall pay to the Treasurer two dollars annually. These dues shall be payable before each annual meeting, and any member whose dues are unpaid shall have no vote at the annual meeting, nor shall he receive a copy of the transactions of the Association. Any member who shall be two years in arrears for dues shall, after notification by the Treasurer of his indebtedness, forfeit his membership in default of payment.

ARTICLE XVI.

QUORUM.

Twenty members shall constitute a quorum at any meeting of this Association.

ARTICLE XVII.

MEETINGS.

This Association shall hold one meeting each year.

ARTICLE XVIII.

AMENDMENTS.

This constitution may be amended by two-thirds vote of the members present at any annual meeting, providing the proposed amendment shall have been presented in writing at the previous annual meeting.

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Minutes of Second Annual Meeting.

FIRST DAY,

Wednesday, May 14, 1903.

MORNING SESSION.

THE meeting was called to order at 10:20 a. m. in the Assembly Hall of the Law Department of the Georgetown University at Washington, D C., by President William A. Howe, who then introduced the Commissioner of Pensions, Hon. E. F. Ware. Commissioner Ware made the following

ADDRESS OF WELCOME.

Mr. President and Gentlemen of the Association:

An American philosopher once said that the proper study of mankind was woman. [Laughter.] Today is the first anniversary of my being in the Pension Bureau, and after having passed one year there, I have come to the conclusion that the poet Pope was right when he said that the proper study of mankind was man. Man is subject to two terrible diseases that stay with him, and haunt him, and burden his life. One of these diseases is youth, the other is old age. [Laughter.] I had a severe attack of the first disease, had it a great many years, and thought I would never get rid of it. But I finally recovered without medical aid. I do not expect to have the other disease. [Laughter and applause.] I am forewarned, and I shall keep clear of it.

But, gentlemen of the Association, there are, among the ranks of the old soldiers, about seven hundred thousand men who have this terrible disease. You meet them every day in your examinations. There are, surviving, of the old soldiers, about nine hundred thousand, and there are now about seven hundred thousand upon the pension roll. They are

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going now at the rate, judging from last month, of about one hundred per day.

But you need hardly fear that you are going to run out of a job, because, since I have been in office, Congress has enlarged the pension roll, by general and special acts, by about a thousand per month.

The number of gentlemen of the medical profession in the Bureau, as special surgeons, specialists and examiners, is about forty-four hundred, comprising nearly fourteen hundred boards. The number of examinations are over one hundred and fifty thousand per year. Last month the number of examinations in the United States were nearly a thousand for each working day. This is an enormous amount of work, and it is a sort of solemn task. There is nothing that fills me with so much regret as to read my daily mail from all of these scattered persons who send to me accounts of their griefs and disabilities, the griefs of men who have made a part of the history of our country, a part that will always live. [Applause.]

It is to you, gentlemen, that these old men are confided, and I feel sure that you will give them your best attention.

In closing, gentlemen, I hope that the pathological sequence of this meeting—if I can interrupt myself here I might say that this term "pathological sequence" is one of our best terms, [Laughter and applause.]—I hope that the pathological sequence of this meeting will be a great diffusion of knowledge and the building up of the art and science of your profession, because your profession has become an art and a science, and I hope it will be for the benefit of the United States, of the Pension Bureau, and of the old soldiers.

On behalf of the Pension Bureau and the old soldiers and myself, Mr. President, I welcome you all to the city of Washington. [Great Applause.]

PRESIDENT HOWE:—Mr. Commissioner: In behalf of the Association, and personally, let me thank you most heartily for these greeting words, to which we have listened with so much pleasure. In them we find not only the welcome which you have so graciously extended but much

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to encourage us in the performance of our duties as examining surgeons. As an organization we shall always deeply appreciate the kindly interest which you have manifested in our welfare. Even greater dangers than those of your youth have confronted us. Ours have arisen in infancy, which is conceded by all to be the most critical period of one's existence—a period abounding in fatalities. But thanks to the guiding hand of devoted friends, it has fortunately escaped all impending sickness. Its growth has been highly gratifying, far surpassing the expectations of its most enthusiastic promoters. Should it, like yourself, triumph over the danger incident to its youth, and ripen into the vigorous manhood of our distinguished Commissioner, it can but accomplish great good in the medical profession. While today commemorates the first anniversary of your advent into the high office which you dignify, it also finds us, though not yet one year old, rejoicing with over seven hundred members, devoted to the advancement of the Association. Though already strong numerically, much yet remains to insure the success of our undertaking. As in the past you have so liberally contributed to the success of the Association, so may you in the future look well to its promotion. Should we succeed, as we believe we will, no small amount of the credit will reflect on you and your able co-worker Dr. Houston. But, whatever the future may have in store for us, either individually or collectively, we will always cherish a fond remembrance of your pleasant words. [Applause.]

Dr. C. H. Glidden, Treasurer, moved that the annual dues of each member for the coming year be two dollars. The motion was seconded by Dr. Taneyhill, and was agreed to unanimously.

Dr. Wheelock Rider, Secretary, read the

MINUTES OF LAST MEETING.

Gentlemen:—

It would seem proper that the Secretary's minutes of the first meeting of our Association should be prefaced by a brief review of the means by which its organization was effected.

On January 25, 1902, our President, Dr. William A. Howe, a member of the Ontario County (N. Y.) Board of

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U. S. Pension Examining Surgeons, issued a circular letter to each of the sixty-two Boards of New York State and to each of the twenty-five Expert Surgeons, submitting to their consideration the advisability of attempting an organization of the U. S. Pension Examining Surgeons of the State of New York. He had previously ascertained that the Bureau of Pensions was favorably inclined toward his undertaking. Encouraged by the favor with which his project was welcomed on all hands, he issued on May 12, 1902, a call for a meeting of the New York State Examining Surgeons, to be held at Saratoga Springs, on June 9, 1902, this being the time and place of the meeting for that year of the American Medical Association.

This call was issued in behalf of a representative committee consisting of a member from each of the twenty-two Boards of New York State and one Expert Surgeon, your Secretary.

The members of the Saratoga Board constituted the reception committee, its chairman being Dr. W. H. Hall, who became our First Vice-President, and who was most active in his labors before and during this first meeting. In the announcement it was stated that the then Medical Referee, Dr. J. F. Raub, had strongly expressed his approval of the proposed organization and had promised to meet with us and present a paper. Dr. Wm. E. Swan, chairman of the transportation committee of the American Medical Association, courteously extended to Pension Examining Surgeons the railroad privileges of this association.

So well had the initial meeting been planned that the attendance largely surpassed the expectations of the organizers of the Association, about eighty surgeons being present. Of those signing the roster, thirty-eight were from New York, twelve from Pennsylvania, four from Ohio, four from Vermont, three from Massachusetts, two from New Jersey, while Missouri, Connecticut, Florida, and Colorado each contributed a representative.

At ten a. m. on June 9, the meeting was called to order by Dr. Wheelock Rider, of Rochester, who nominated as chairman pro tempore, Dr. E. Valencourt Deuell, President of the Saratoga Board. The nomination was seconded and Dr. Deuell was unanimously elected. Dr. Wm. A. Howe, of Phelps, nominated for Secretary pro tempore, Dr. Wheelock Rider. The nomination was seconded and Dr. Rider was elected.

Dr. E.V. Deuell welcomed to Saratoga the gentlemen in attendance, in a graceful address in which after a few words of cordial greeting he commented upon the advantages

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which organization of Examining Surgeons promised in furthering the interests of the Examining Surgeon, the pensioner and the government.

Dr. Wm. A. Howe moved that the paper prepared by Dr. Geo. W. Miles, of Oneida, entitled, "The Influence and Value of Organization" be read by Dr. Wm. Taylor, of Canastota, Dr. Miles being detained from the meeting by a serious illness. Motion was seconded and carried. Dr. Miles' paper was largely concerned with the nature and advantages of organization in general and organization of the Pension Examining Surgeons in particular. A resolution, duly seconded, that Dr. Miles' paper be filed for reference, was carried. A resolution of sympathy for Dr. Miles was unanimously carried.

Dr. C. H. Glidden, of Little Falls, moved the appointment by the chair of a committee to report on organization. Motion seconded. Dr. Wm. A. Howe, in his remarks upon this motion, counseled deliberation, and commented upon the fact that many representatives from states other than New York were present—that evidences of their interest were apparent, and that the possibility of effecting an organization upon broader than state lines should be borne in mind. He moved to amend resolution "by specifying the number of members of the committee as nine." Amendment seconded, and the resolution carried.

Dr. P. Y. Eisenberg, of Norristown, Pa., remarked that it was desirable that committee report at the opening of the afternoon session. Dr. O. W. Weeks, of Marion, Ohio, counseled greater deliberation on the part of the committee, — that they be allowed more time. Dr. Dennett, of New York, Dr. Firmin, of Findlay, Ohio, and others participated in the general discussion which followed.

Dr. Wheelock Rider, of Rochester, N. Y., read a brief paper on "The Advantages of Organization From the Point of View of the Expert Surgeon." He pointed out the possibilities which such an organization afforded, suggested special points in which the Expert Examiner and Board Surgeon might aid one another and spoke of the difficulties which at present surround the Expert in completing his certificates.

The discussion of this paper was participated in by Medical Referee Raub, Dr. Kirkendall of Ithaca, N. Y., Dr. Whitcomb of Norristown, Pa., Dr. Bemis of Jamestown, N. Y., Dr. Stevens of Athens, Pa., Dr. Greenwood of Waltham, Mass., Dr. Paine of Glens Falls, N. Y., Dr. Koyle of Hornellsville, N. Y., and Dr. Case of Elmira, N. Y. Dr. Case agreed with the reader that it is impossible to measure degree of profound one sided deafness, the hearing of the other ear being

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good and claimant a resourceful malingerer. On motion, meeting adjourned until 2 p. m.

On convening for the afternoon session, the meeting was called to order by Dr. Deuell, President pro tempore. The chairman appointed as a committee on organization the following:

Dr. Wm. A. Howe, of New York,
Dr. G. Law, of Colorado,
Dr. J. Sutcliffe Hill, of Vermont,
Dr. Henry Allers, of New Jersey,
Dr. F. W. Firmin, of Ohio,
Dr. C. L. Stevens, of Pennsylvania,
Dr. J. H. Maxwell, of Illinois,
Dr. L. J. Gibbs, of Massachusetts,
Dr. Charles James Fox, of Connecticut.

Dr. J. F. Raub, Medical Referee of the Bureau of Pensions, read a paper since made familiar to us all—a most helpful paper from every point of view, and thoroughly appreciated—"Defects in, and Suggestions for the Improvement of, the Reports of Examining Surgeons."

It was immediately moved and seconded that Dr Raub's paper be printed and distributed to each Board of Pension Examining Surgeons in the United States. The paper aroused a very interesting discussion, opened by Dr. William Warren Potter, of Buffalo, N. Y., and continued by Dr. McConnell of Pennsylvania, Dr. Hill of Vermont, Drs. Kirkendall, Koyle, and Madden of New York, and many others.

The committee on organization reported as follows: Your committee on organization beg leave to submit the following report which was unanimously adopted at our meeting.

First—We recommend the formation, at this meeting, of a National Association of United States Pension Examining Surgeons, to be known as "The National Association of United States Pension Examining Surgeons."

Second—As officers for such Association we recommend the following:

President,
Four Vice-Presidents,
Secretary,
Treasurer,
Executive Committee of eight, of which the President shall be a member ex officio.

CONSTITUTION AND BY-LAWS.

The object of this Association shall be the mutual improvement of its members and the efficiency of the work

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performed, both for the department and the disabled soldiers.

Its convention shall assemble annually at such time and place as may be deemed best by the President of the Association.

The annual dues of this Association shall be one dollar.

RECOMMENDATIONS.

1. We recommend that a committee of five be named by the chairman of this meeting, which committee shall propose officers to be elected for the coming year.

2. We recommend that the officers of this Association be requested to formulate and present a more complete Constitution and By-Laws, for consideration at our next annual meeting.

Signed Dr. Howe, New York,
Dr. Law, Colorado,
Dr. Hill, Vermont,
Dr. Allers, New Jersey,
Dr. Stevens, Pennsylvania,
Dr. Firmin, Ohio,
Dr. Maxwell, Illinois,
Dr. Gibbs, Massachusetts.
(Dr. Fox, Connecticut, absent.)

Dr. Howe moved that the report be considered section by section. Motion seconded and carried.

After much discussion and motions to amend report as to name of the society, all of which were lost, section one was adopted. The other sections and recommendations were then adopted in order.

The chair appointed the following committee on nomination of officers: Drs. Taylor of New York, Hill of Vermont, Bendell of New York, Hall of New York, and Grey of Vermont.

Dr. Howe moved the following committee of publication, to supervise publication of transactions of this meeting, the publication of Dr. Raub's paper, etc.: Dr. William Warren Potter, of Buffalo, N. Y., Dr. Wheelock Rider, of Rochester, N. Y., Dr. William H. Hall, of Saratoga Springs, N. Y. Motion seconded and carried.

The committee on nominations reported as follows:

President—Wm. A. Howe, M. D., Phelps, N. Y.

Secretary—Wheelock Rider, M. D., Rochester, N. Y.

Treasurer—Charles H. Glidden, M. D., Little Falls, N. Y.

Vice-Presidents—Wm. H. Hall, M. D., Saratoga Springs, N. Y.; Cyrus L. Stevens, M. D., Athens, Pa.; Charles James

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Fox, M. D., Willimantic, Conn.; G. Law, M. D., Greeley, Col.

The committee further recommended that the Executive Committee be appointed by the President.

On motion, duly seconded, this report was adopted and the above officers were declared elected. Upon taking the chair President Wm. A. Howe briefly expressed his appreciation of the honor conferred upon him, and hoped that during the coming year the organization of the Association might be perfected and the foundation laid for its continued growth and prosperity.

A resolution of thanks to Medical Referee Raub, for his attendance and interest, was unanimously carried, as was a resolution expressing the thanks of the Association to the members of the Saratoga Board for courtesies extended.

On motion, the meeting adjourned subject to the call of the President.

WHEELOCK RIDER,
Secretary.

A motion was made and sustained to approve the minutes as read.

At the suggestion of Dr. Eaton, of Massachusetts, the motion was amended to include the printing of the minutes of the Saratoga Springs meeting, June 9, 1902, with the proceedings of this session; and, as amended, the motion was agreed to.

Dr. Fox, of Connecticut, moved that a vote of thanks be tendered to the Secretary for his services during the past year.

The motion was agreed to unanimously by a rising vote.

Dr. Wheelock Rider thereupon read the

SECRETARY'S REPORT.

Gentlemen:—

It seems to me that the Secretary's report for the past year should include a record of all the efforts of our officers to spread among Pension Examining Surgeons a knowledge of the purposes and merits of our Association in order that we might be assured of the membership to which the excellence of our organization entitles us.

This work of making our newly-born Association known was prosecuted with great vigor by our officers and the mem-

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bers of our Executive Committee. The Executive Committee appointed by the President after the first meeting was made up as follows:

The President, *ex officio.*
Francis W. Firmin, M. D., Findlay, O.
John Van Rensselaer, M. D., Washington, D. C.
J. Sutcliffe Hill, M. D., Bellows Falls, Vt.
Warren E. Anderson, M. D., Pensacola, Fla.
Henry Allers, M. D., Newark, N. J.
John H. Maxwell, M. D., Newton, Ill.
G. Lane Taneyhill, M. D., Baltimore, Md.
Joseph E. Jones, M. D., De Soto, Mo.

Among these gentlemen and the officers was divided the labor of directing the attention of Pension Examining Surgeons to our Association and of inducing as many as possible to apply for membership. Our thanks are due each and every one for the considerable labor and attention involved in the performance of these duties. The paper of Dr. Raub was published in the Buffalo Medical Journal of October, 1902. It was immediately reprinted in an edition of two thousand and mailed to the Secretary of each of the one thousand five hundred Examining Boards and to every Expert Examining Surgeon in the United States, about five hundred in number. With Dr. Raub's paper was inclosed a circular letter, stating briefly the objects of the Association and the advantages of membership therein and inviting every Pension Examining Surgeon to become a member. The result of this work was almost immediately apparent in a considerable acquisition of new members.

An announcement and program of the present meeting was mailed on April 13, to every Pension Examining Surgeon in the United States, nearly five thousand. With this was inclosed, to all non-members, a cordial invitation to join the Association and appended to the invitation was a blank form for membership application. The response was most encouraging. As a result two hundred and thirty-five Pension Examining Surgeons have applied for membership at this meeting.

Twice during the past year, reading notices have been sent out to about one hundred of the more important medical

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journals throughout the country, giving details concerning our organization, notices of meeting, etc.

As a result of this work and of the intrinsic value of our organization we have during one short year secured a membership of nearly seven hundred and fifty, showing a rapidity of growth unprecedented, I think, in the annals of medical societies.

Respectfully submitted,

WHEELOCK RIDER,
Secretary.

A motion was made and seconded that the Secretary's Report be adopted and filed for publication.

The motion was agreed to.

Dr. C. H. Glidden, Treasurer, read the

TREASURER'S REPORT.

Mr. President and Gentlemen:—

I have the honor and pleasure of submitting the first report of the Treasurer's Office, covering the period embraced in the first current year of the existence of the National Association of U. S. Pension Examining Surgeons. It has been given to me to be the first witness of the growth of this Association, since the only qualification for membership required has been the payment of the membership fee, the understanding at the outset being, that all Examining Surgeons are entitled to membership.

As will be seen, therefore, the responsibility for the character and quality of the timber will rest upon other shoulders than ours.

While the attendance at the initial meeting in Saratoga last June was about seventy-five, only eighteen paid their dues at that time and place.

During the balance of June and July, four others remitted; in August, nine and in September, six. So that on October first last we numbered just thirty-seven souls.

It was about October first that our efficient President and our energetic Secretary began to do missionary work. Dr. Raub's excellent paper was published and circulated widely, and in addition to this, circular letters were sent to Boards in

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every state. The result was forty-two new members in October, more than doubling the membership in one month.

The question of interest and growth was never for one moment in doubt after the record of October, but when November added sixty names and December just one hundred more, the enthusiasm of all who had been doing the work of organization was unbounded. Nor has there been the slightest abatement up to the present time. The brilliant program prepared for this meeting, and sent out to all the Examining Boards in the United States, accompanied by a printed slip and blank form of application, has brought us during the past thirty days nearly two hundred and fifty members.

It is with peculiar pleasure then, gentlemen, that I report to you today a paid membership of just five hundred and one and over two hundred applications for membership to be presented at this meeting.

Receipts to date:		
Five hundred and one membership fees (at $1.00),	$501.00	
Seventy membership fees (at $2.00 for 1903-4),	140.00	
Total,		$641.00
Expenses to date:		
President's office,	$ 42.13	
Secretary's office,	212.53	
Treasurer's office,	37.83	
Miscellaneous,	15.35	
Total,		307.84
Balance on hand,		$333.16

Your Treasurer begs leave to state that he has guided the financial ship to the best of his ability. Without Constitution or precedents, it was much like a mariner without a compass. The money has been used by your officers for the good of the Association, largely to make the Association known. Printing and circulating Dr. Raub's paper alone cost nearly one hundred dollars and we consider it very well spent. Printing, postage and stationery cover almost every

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item. A small amount, about twenty-five dollars, has been paid for clerical work by the Secretary and Treasurer. Postage has been a large item, as the correspondence has been very extensive.

The items of my account are many and their reading would be wearisome. All payments have been made without warrant and on the sole responsibility of the Treasurer. Vouchers for all money expended are on file and ready for inspection.

Respectfully submitted,
C. H. GLIDDEN, *Treasurer.*

Dr. Glidden immediately moved that an auditing committee be appointed to examine his accounts and report to the Association.

THE PRESIDENT:— Gentlemen, you have heard the Treasurer's report, which is certainly very gratifying. I would suggest that the Treasurer's motion for an auditing committee be coupled with another which shall include the recognition of Dr. Glidden's efficient work during the past year.

Dr. Eaton, of Massachusetts, suggested that with the confidence which all had in Dr. Glidden, there was no necessity for an auditing committee, but on Dr. Glidden's personal request that an auditing committee be appointed, Dr. Taneyhill moved as an amendment that the Treasurer's report be accepted and that his account be referred to the Executive Committee for audit. The motion as amended was agreed to.

On motion, the thanks of the Association were unanimously extended, by a rising vote, to Dr. Glidden for his services as Treasurer.

Dr. J. Sutcliffe Hill, of Vermont, on behalf of the Executive Committee, called attention to the printed copies of the proposed Constitution which had been distributed among the members. He requested that any suggestions regarding amendments and alterations be made to members of the Executive Committee, that the adoption of the Constitution might be facilitated on the following day.

On motion, the reading of the proposed Constitution was dispensed with.

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THE PRESIDENT:—The Medical Referee has kindly consented to be present on this occasion and to address us. We have had the privilege and the pleasure of listening to our distinguished Commissioner, and now we shall have the privilege and pleasure of listening to our distinguished and energetic Medical Referee.

Dr. Sam Houston, Medical Referee, read the following

ADDRESS.

Mr. President and Members of the National Association of United States Pension Examining Surgeons:

It is not my privilege to welcome you to our Capital City nor extend the greetings of the Bureau of Pensions to you,—that has been done in heart-felt classic language and any effort of mine would only serve to becloud the salutation extended by our Chief, the Honorable Commissioner of Pensions. As Medical Referee of the Bureau of Pensions, I but voice the sentiment of the gentlemen composing its medical branch, with which you gentlemen are closely affiliated, in bidding you thrice welcome to our headquarters. We of the central office know that we will be benefited by this convention, and hope that you will return to your homes richer in intellectual wealth, by imparting to each other in this Association the varied information and experiences that must come in different aspects to every Examining Surgeon.

The dispensation of one hundred and forty millions of dollars to the soldiers, sailors, their widows and children, cannot fail, since the dispensers are only human, to provoke unfavorable criticism among the beneficiaries, although they may be honest and upright.

Not understanding the complexity of the pension laws nor the rulings and decisions made thereunder, nor the special environments of each particular case, they doubt the justice of the Bureau and impugn the integrity of its officers.

We all suffer, from the Boards of Examining Surgeons through the various ramifications of the office to the Hon. Commissioner of Pensions upon whose devoted head the pent up vials of wrath are poured out, making the position

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one to teach meekness, though not highly conducive to the development of the greatest Christian graces.

We are, however, thankful that at the present time these are but isolated cases. The great mass of the soldiers and sailors of the country give us the credit of being honest in our endeavors to comply with the law.

We have doubtless all seen the old soldier's heart swell with gratitude and pleasurable emotion, his face radiant with smiles as he hastens to inform his dependent household of an increase in the amount of his pension, not forgetting, ere he takes his hurried departure, to return his heartfelt thanks to those who have aided him in securing the deserved increase which will assist in furnishing the necessaries of life and making home happier. Such scenes must bring joy to our hearts and strengthen us in our efforts to do all we can honestly, under the law, for the soldier.

No branch of our national government has so many questions—rather problems—to solve as the Bureau of Pensions.

The solutions are apparently, in our strenuous American life, of slight importance to the mass of citizens in their individual capacity. It is only in the aggregate that people are interested in the work of the Bureau, and yet each individual case is of as much import to the claimant in its decision as was that in the Court of Appeals in the Northern Securities case to the New York syndicate, and it is as important that our adjudications should be based on justice as that the decisions of the United States Supreme Court should be in accordance with the constitutional law. The Hon. Commissioner of Pensions, I am satisfied, would not that one in the service of the Bureau should do an injustice to the lowliest of these defenders of our country's unity. It were better that our government should suffer wrong than that one of these, our nation's wards, should receive injustice.

Gentlemen, to you let me say:—Deal justly, kindly, gently with the old soldier. Remember how he bravely faced the storms of shot and shell, disease, pestilence, often famine, that this now greatest of all nations should not be torn asunder.

To err is human—mortal man is prone to make mistakes—but see to it that no patriotic soldier is wronged by

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any act of yours. And largely in your hands, you gentlemen of the Examining Boards, rests the question of rates, of so much moment to the individual recipient of pensions, for to you must the medical branch of the Bureau turn for guidance and support in solving the many intricacies presented to us. We know you have the ability and that you desire to see that justice is done between our nation and its wards, and to see that no foul blots mar the brightness of this immaculate roll of honor, which will be handed down to posterity as the proudest inheritance which can be transmitted to the generations yet unborn, and which no power on earth can wrest from them. The title of "Union Soldier in the Civil War" may be the only bequest, but the recipients of this legacy will treasure their "Coat of Arms," if only a button, with due veneration, and point with pride to their patriotic ancestry who met upon the field of battle Americans equally brave and courageous. I have confined my remarks principally to the Union soldiers of the Civil War, not that I would have you forget those brave men who gave freedom to Cuba with a republican form of government, or who were instrumental in planting the American flag, that emblem of civil and religious liberty, in the Philippine Isles, nor those who have carried "Old Glory" all over the world by sea. Let us express the hope that hereafter its silken folds may ever be emblematic of peace and good will to man.

In addressing this Association you doubtless expect from me some suggestions as to the details of the work devolving on the Boards of Examining Surgeons, but, knowing from my observations in the central office, the just and careful manner in which your work is generally done, your ability and your years of experience, I feel that any attempt on my part to instruct you would be a work of supererogation. We in the central office know that this Association is composed of a class of men from the elite of the medical profession in our nation.

You gentlemen may not all be authors nor professors in medical colleges, you may even reside in the country at the crossing of the roads, but your training in the schools of medical experience enables you to sift the wheat from

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the chaff and expose the fallacies of fine woven theories and adduce the facts resulting from clinical observation, for the experience based on scientific deductions, verified by pathological examinations, is a sure and only basis for diagnosis and prognosis in disease. I fully agree with Dr. S. Weir Mitchell, who said "the country cross-roads doctor seldom makes mistakes."

I am pleased to see in this Association so many wearing the insignia of a Union soldier, the grandest badge of distinction our nation can bestow upon her Union heroes, with its talismanic powers of opening the hearts of all patriotic citizens, from the unsalted seas of the North to the tropic regions of the Southland, venerated alike by the people all over our regenerated country, especially true of those who wore the blue and gray in that fratricidal strife the unpleasant memories of which we would gladly banish for evermore, but they stand on the distant mountain top, fugitive, yet unwilling to depart.

The insignia of a medical officer has a special significance, for it speaks of service to the sick and wounded, of both the Blue and the Gray, and true to the teachings of our Saviour and the tradition of our noble profession, the medical officer knew no distinction between friend and foe; he only saw in each requiring assistance, a brother, and true to the requirements of the teachings of Christianity regarding the great brotherhood of man, gave the required aid and succor alike to all.

The badge of a medical officer speaks of battling with death in the pestilential camps, of stanching the flow of the life current, of binding up the mortal wounds on the field of battle, and of being the messenger to transmit those sacred messages of the dying husband or son to the loving and sorrowing wife or mother. These acts ennoble our profession and embalm it in the human heart forever.

As you are aware, the archives of the Bureau of Pensions contain many historical pathological investigations which should be utilized for the benefit of medical science in general. Here are pathological histories of cases made by competent observers, many by yourselves, gentlemen, that refute time-honored theories regarding disease. From

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this great number of cases, properly collated and classified, much valuable information could be adduced and disseminated to the advancement of medical knowledge.

The reports embrace nearly, if not quite, all the diseases to which adult life is heir.

The suggestion is in your hands. If you believe it worthy of your consideration and approbation, let your plenipotent influence be exerted on Congress that this storehouse of valuable medical information may be opened up and the rich treasures in pathology be studied to the end of enriching our medical literature and enhancing the progress of medical science. This field would open up a history of pathological changes not obtainable by any other means of investigation and should be ultilized.

In conclusion, gentlemen, permit me to congratulate you upon the organization of this Association, not only for the unifying of the work of the various Examining Boards, but for the possibilities in the near future.

On motion of Dr. Tweedle, of Pennsylvania, a rising vote of thanks was unanimously tendered to Commissioner Ware and Medical Referee Houston for their addresses.

On motion of Dr. Taneyhill it was ordered that when the Association adjourn it be to 2:15 o'clock p. m.

Dr. P. Y. Eisenberg, Norristown, Pa., read a paper entitled "Rheumatoid Affections Considered as Pensionable Disabilities." The paper was discussed by Drs. Baker of Washington, D. C., Byers of Pa., Greenwood of Mass., Whitcomb of Pa., Merrill of Pa., Tweedle of Pa., Ingram of the Bureau of Pensions, Strickland of Pa., and Thomas Franklin Smith of N. Y.

THE PRESIDENT:—In conference with the Medical Referee I find that a reception by the Commissioner of Pensions has been provided for this evening at eight o'clock at the Pension Office. Dr. Houston also suggests that the ladies are invited to be present with us at the reception. If we adjourn now we are due to reassemble at 2:15.

Dr. Rider moved that the Association return to executive session for a moment. The motion was agreed to.

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On motion of Dr. Rider, the Executive Committee of the past year was discharged with the thanks of the Association.

DR. RIDER:—I move that the President appoint a new Executive Committee, consisting of six members, three for two years, and three for one year.

Dr. Rider stated that this motion was made merely to so arrange the committee that three more members, for three years, might be appointed as soon as the Constitution was adopted. The motion was agreed to.

Subsequently the President announced that, in accordance with the foregoing resolution, he would appoint the following as members of the new Executive Committee:

Dr. Charles James Fox of Connecticut, Dr. J. Sutcliffe Hill of Vermont, and Dr. G. Lane Taneyhill of Maryland, for two years. Dr. Francis W. Firmin of Ohio, Dr. Henry Allers of New Jersey, and Dr. Adolf Alt of Missouri, for one year.

Upon motion of Dr. Rider, at 12:40 p. m., the Association adjourned to 2:15 p. m.

Wednesday, May 13, 1903.

AFTERNOON SESSION.

Dr. John C. Hemmeter, of Baltimore, Md., read a paper entitled "Chronic Malaria: Complications and Sequelæ, with Reference to Digestive Complications."

Following this was the paper of Dr. C. W. S. Frost, of Waterbury, Connecticut, on the "Physical Signs of the Heart: How Detected and How Described." The discussion was participated in by Drs. Hayes and Alleger, of the Bureau of Pensions, Rice of Ohio, Stillson of Ind., and Eaton of Mass.

Dr. William Warren Potter was the next reader, with a paper on "Diseases of the Respiratory Tract." Discussion by Drs. Lewis of the Bureau of Pensions, Case of New York, and Sharrer of Ind., followed.

At 5:32 p. m., upon motion, the Association adjourned to meet at 9 a. m. on the following day.

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SECOND DAY.

Thursday, May 14th, 1903.

Morning Session.

Dr. Taneyhill, of the Executive Committee, read and submitted the following report:

The auditing committee of the Executive Committee respectfully report that they have gone over the vouchers and accounts of the Treasurer and have found them correct.

Balance, $333.16.

G. Lane Taneyhill,
Charles James Fox.

Upon motion it was ordered that the report of the auditing committee be received and spread upon the minutes.

The draft of proposed Constitution as prepared by the Executive Committee, was taken up for consideration, read section by section, amended and adopted. (In the form finally agreed upon it will be found printed elsewhere in this volume.)

Dr. Stevens, of Pennsylvania:—I move that the Secretary be instructed to omit from the printed transactions all of the discussion in connection with the adoption of this Constitution. I do this simply in the interest of brevity and economy.

The motion was seconded and agreed to.

A motion was made, seconded and agreed to that the Executive Committee be instructed to formulate By-Laws to be submitted at the next meeting.

Dr. Ernest F. Robinson, of Kansas City, Missouri, read a paper on "Tropical Abscess of the Liver." The paper was discussed by Drs. Sarles of Wisconsin, Sharrer of Indiana, and Eisenberg of Pennsylvania.

Dr. W. T. Sarles, of Sparta, Wisconsin, presented a paper on the "Etiology of Some Pensioned Disabilities Measured by Modern Pathology."

Dr. J. O. Stillson, of Indianapolis, Indiana, read a paper on "Hints to the General Board Surgeon on Eye and Ear Examinations." The paper was discussed by Drs. Farley

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of New York, Lewis of the Bureau of Pensions, Glidden of New York, and Rider of New York.

The meeting then adjourned until 2 p. m.

Thursday, May 14, 1903.

AFTERNOON SESSION.

Dr. Taneyhill, from the Executive Committee, read and submitted the following report on nominations:

The Executive Committee Report that they have organized as follows: G. Lane Taneyhill as Chairman; C. J. Fox as Secretary.

The Committee further report that two hundred and thirty-five new members have joined at this meeting who have duly qualified. The Committee, after carefully canvassing the names of those who in the opinion of the Committee should be officers, unanimously report the following nominations:

President, William A. Howe, of New York.

First Vice-President, P. Y. Eisenberg, of Pennsylvania.

Second Vice-President, John Van Rensselaer, of the District of Columbia.

Third Vice-President, Parks Ritchie, of Minnesota.

Fourth Vice-President, J. M. Thompson, of Kansas.

Secretary, Wheelock Rider, of New York.

Treasurer, Charles H. Glidden, of New York.

Vice-President Stevens took the chair.

DR. GIBBS, of Massachusetts:—I move that the Secretary be authorized to cast one ballot for these officers.

The motion was seconded and agreed to, and the Secretary accordingly cast the ballot as directed, and the presiding officer declared the nominees duly elected.

THE PRESIDENT (on assuming the chair):—Gentlemen: Though my address comes a little later, I desire to now assure you how fully I appreciate this responsibility, this compliment, this honor, and that in accepting the same I am not only willing, but desirous of leading wherever

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you, my associates, will follow, in the direction of the advancement and promotion of this Association. It has seemed to me that the possibilities of this organization were full of usefulness; that if we can but maintain good judgment, careful consideration, and liberal progressiveness in its management, its influence ought to be felt throughout the medical profession of the United States. Inasmuch as our time is rapidly passing and we yet have a paper by our distinguished alienist, Dr. Richardson, further remarks from me at this time are unnecessary. I will only add, however, that I thank you most heartily for this renewed confidence in my ability as your presiding officer, and I promise that so far as it may be in my power, I will see to it that every interest conducive to the good of the organization will receive my personal and careful consideration. [Great applause.]

Dr. A. B. Richardson, of Washington, D. C., read a paper on "Insanity as a Sequel to Physical Conditions."

THE PRESIDENT:—I desire to announce the names of the three additional members of the Executive Committee who are to serve for three years:

W. T. Sarles, of Sparta, Wis.
H. E. Sharrer, of Hammond, Ind.
C. L. Stevens, of Athens, Pa.

A suggestion was made that the names of the whole Executive Committee, as now completed, be announced. The Secretary accordingly read the full list as follows:

For one year:
Adolf Alt, of St. Louis, Mo.
F. W. Firmin, of Findlay, O.
Henry Allers, of Newark, N. J.

For two years:
Chas. J. Fox, of Willimantic, Conn.
G. Lane Taneyhill, of Baltimore, Md.
J. Sutcliffe Hill, of Bellows Falls, Vt.

For three years:
W. T. Sarles of Sparta, Wis.
H. E. Sharrer, of Hammond, Ind.
C. L. Stevens, of Athens, Pa.

THE PRESIDENT:—Before presenting the President's address I should like to speak of the valuable information

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which those of us who were in attendance at Saratoga, derived from our association with Dr. Raub. The Doctor, as you know, was present at that time as Medical Referee. To-day we have Dr. Houston with us in the same capacity. For some considerable time at our last year's meeting, questions were propounded to Dr. Raub who very patiently and instructively answered them, much to our gratification. It would seem fitting on this occasion, that a similar opportunity be offered to again profit by the presence of the Medical Referee. So after the conclusion of the next paper we will avail ourselves of the privilege of putting to Dr. Houston, unless he should decline, some of the questions which so often perplex the Examining Surgeon.

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DR. HOUSTON:—I hope the President will excuse me. I should much prefer to be called upon by any of you gentlemen at my office in the Bureau of Pensions. I can there have the advantage of referring to cases which may be similar to the ones inquired about, and in that way can better make explanations and suggestions. I will be at the department every day from 8:30 in the morning until 4 in the afternoon, and I invite any or all of you to meet me there and ask any questions you desire. I do not know that it will be possible for me to stay here during the afternoon.

A motion by Dr. Stevens, of Pa., was seconded and agreed to, that each person who had taken part in the scientific discussion be given an opportunity to revise the stenographic report of his remarks.

Dr. Howe then read the

PRESIDENT'S ADDRESS.

Fellow Examiners:—

Our second annual convention will soon pass into history. Upon the measure of success or failure which has attended its efforts, let the future, rather than the present, pass judgment. While it may be said to mark the second mile-stone in the history of our Association, it really launches into the fraternal world another national medical organization, the future of which will largely depend upon the

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wisdom and energy displayed in its management, and the intelligence injected into its deliberations. To us as examiners, as well as to the profession at large, its field of usefulness ought to be made both a fertile, and an expansive one. It should be made to embrace that all important and indispensable branch of our exalted art, the diagnosis of disease, and its scope should extend into practically every county within the boundary lines of our great republic. The scientific motive of this Association should stand paramount to all others, and such ulterior purposes as may from time to time arise should be made subservient to our loftier ambitions. Its first and constant effort should be exercised in discovering special opportunities for perfecting ourselves in physical diagnosis, and teaching us the value of careful observation, and the necessity of detailed description. In doing this, it would not only enable us to render more efficient service to the department, and to deal more considerately with the dependent soldiers, but to serve our daily clientage more intelligently and successfully.

It should be made to exert its influence, not alone among the four thousand physicians engaged in pension work, as such, but among the profession at large, where these numerous co-workers are to be found in their daily avocations. Not only should it make better practitioners of those engaged in pension work, but every physician so employed should regard it as his personal duty, as well as a pleasure, to lend his individual influence in the upbuilding of the Association. Nor should he rest content in alone contributing his personal co-operation in this direction, but should also enlist the services of others for the same laudable purpose.

Our one great aim should be to create and maintain an organization of medical men, whose desire is to gain a more comprehensive knowledge of pathological conditions and their sequelæ. How best can we detect and describe them? How best can we utilize our knowledge of such, not only in the examining room but in our regular practice? The attainment of this efficiency would not only be highly appreciated by the department, but early recognized in our respective communities, and he who enjoys the distinction of being a

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competent examiner will also have the reputation of being a good diagnostician, and a successful practitioner. Thus while he is rendering aid in the promotion of a most praiseworthy enterprise, he will himself be profiting both intellectually and professionally. Let us then encourage each other, not only to improve the services which we render in the examining room, but to raise the general standard of our individual private practice. Let us profit by the many valuable lessons, which are so often to be learned in the performance of our official duties, and let us carry the knowledge so attained into our daily lives. Let us strive to make the terms "a pension examiner" and "a skillful diagnostician" mean one and the same thing. Should we succeed in doing so, we shall distinguish this Association not alone as pension examiners, but as a body of accomplished diagnosticians. We shall render it so instructive and profitable to its members, that all examiners not already identified with it, will seek admission into its deliberations. We shall so perpetuate its usefulness, in the profession, that long after its necessity for pension work ceases, it will continue to be a potent factor in the medical world. Such are the possibilities and, I hope, the certainties which lie before us. Let us then, by identification with, and devotion to, the precepts of this Association, enrich not only our own, but the knowledge of others. Let us attempt to unify and improve the present system of examinations, thereby insuring to the dependent soldier, the best and most comprehensive presentation of his existing disabilities. Let us not only cultivate a spirit of good fellowship among our members, but a more intimate relation between the department, the soldier, and the examiner.

While our young Association has already accomplished much in this respect, its mission has scarcely begun. It has merely opened the gate leading into fields fruitful with mutual profit and enjoyment. Only the future can determine as to how freely we shall avail ourselves of the many privileges emanating from our Association. To all of us, the past two days have been highly enjoyable, not alone for the scientific feast presented by our learned authors, but for the pleasure of meeting face to face and hand to hand, with Com-

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missioner Ware and Medical Referee Houston,—a privilege which it is to be hoped has been improved by every examiner in attendance at this convention,—a privilege which certainly has been shared by many an old soldier, who is also an honored and competent examiner. Let us then as an Association see to it that this good work goes on. Let us not only yearly assemble a body of able writers, such as have instructed us on this occasion, but let us gather annually under the same roof and under the same intermingling influences, with the department, the soldier and the examiner. Let us annually bring these three factors into closer touch with each other, that they may the better appreciate the fact that their mutual interests all lie in one and the same direction. Let us emphasize the fact that whatever is good for the department, ought also to prove beneficial to both the examiner and the claimant. Likewise that such as conduces to the efficiency of the examiner, or the co-operation of the claimant, materially contributes to the desired ends of the department. For as no chain can be stronger than its weakest link, so neither can the general administration of this extensive branch under which we serve, be more efficient than the weakest of its constituent parts, namely, the department, the soldier and the examiner. And while we are endeavoring to improve and strengthen the examiner's side of the situation, let us also lend our influence to aid the department and the deserving soldier.

Let us freely exchange ideas, one with the other, not so much as critics but as co-workers, all bent on accomplishing the same great purpose, justice to all concerned. In doing this let us be liberal, progressive and fair-minded, one to the other, never forgetting, however, the actual relations existing between us.

While as examiners we may be able to offer many a suggestion, leading as we believe, to the improvement of the service, we must never be so unmindful of our subordinate position, as to presume to dictate to the department, as to its policies. Should a question arise, the solution of which, in your opinion, might prove advantageous to the Bureau, do not hesitate to submit the consideration of both question and solution, either to the Executive Committee, or to such

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committee as might wisely be created for that purpose. Here it will receive the careful consideration to which its source and importance justly entitle it, and, if deemed expedient, will be referred to the attention of the Medical Referee. Should the result arrived at meet with his approbation and become a part of the executive policy of the department, much good might arise from its adoption. Should it fail, however, to meet with his favor, no harm will arise, and you will have the satisfaction, at least, of doing that which, in your judgment, was your duty. All questions involving a radical departure from existing rulings of the department, should be scrupulously eliminated from public discussion in our conventions. To attempt such would not only engender discord among ourselves, but prove embarrassing to the high federal officials, whom we hope will meet with us from year to year. All such questions should likewise be referred to a suitable committee where they can be disposed of far more advantageously, than in open session. It is not to be expected, of course, that all will think alike. Far better that it should not be so. Nor should it be expected that every question arising in the minds of the four thousand examiners throughout the country should find its way to the ears of the Medical Referee. Even far better that such should not be so. On the contrary only such as bear either directly or indirectly upon the efficiency of the whole pension system, should be brought to the attention, either of the Association or of the department. But when such a question does arise its amicable solution ought not to be a difficult task, when entrusted to parties who are already mutually interested in materially improving each other.

Individually, we ought to appreciate the fact that as examining surgeons, we occupy one of the most responsible and important positions within the gift of our great republic. We stand as judges, as arbiters, as it were, between the government and the claimant. We ought to remember that millions of dollars are annually expended upon our recommendations, and that hundreds of thousands of decrepit soldiers and their families are dependent upon the opinions which we express and the verdicts which we render. In the midst of so stupendous an undertaking, it is not strange, of

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course, that some mistakes should arise. Neither is it to be wondered at, that among the million or more claimants, some should be found who feel that justice has not been done to them. Nor is it surprising, that among this vast multitude of deserving veterans, there should be found an undeserving few who practice all manner of fraud and deception to accomplish their unscrupulous end. The deceptive methods resorted to by these perverters of truth and justice, necessitate the enforcement of certain rules in the department which often delay the adjudication of many a just claim, thus making the innocent to suffer unjustly for the guilty. The administration of the proper remedy for such a condition often rests in our hands. Let us prescribe it in such heroic doses as to purge the honored pension roll of the dishonest claimant.

In our official capacity it would seem as if much might be accomplished, in differentiating the just from the unjust, the honest from the dishonest, the deserving from the undeserving, the malingerer from the truthful, the man who freely opens his full case before us, from the one who apparently tries to conceal his true condition. In attempting this, we should endeavor to give the benefit of the doubt, should there be one, to the claimant, for far better that the guilty should go for a time unapprehended and unpunished, than that justice be wrongfully withheld from a deserving one.

Let us strive individually and collectively to furnish so complete and accurate a pen picture of the existing disabilities as we find them, that the reviewing corps in this city may see the case in the same light in which it appears to us in the consulting room. In order to best accomplish this desired end, it is not only essential that we be competent as examiners, but that we should enjoy both the confidence and hearty co-operation of the claimant. Without it our task is often no easy one. With it many a stumbling-block is removed.

We must assure him that every just claim will receive its full reward at our hands. We must convince him that we view his condition from the standpoint of friends rather than of enemies. We must receive him cour-

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teously, examine him exhaustively, and exhibit so manifest an interest in his case, as to justify and insure his confidence in us. We must impress him with our desire to serve faithfully both the department and the deserving soldier. In return we should expect him to assist us unreservedly in our efforts to properly measure his existing disabilities. With his valuable assistance much of the conflicting evidence which often finds its way into a just and equitable claim, might well be eliminated, especially such as might be attributable to the contradictory reports of various examining boards. Every claimant ought to receive practically the same examination, with substantially the same recommendations, whether he be examined by a board in Maine or one in California. Though the reports of different boards would naturally vary somewhat in their phraseology, the actual description of existing disabilities ought to so far agree as to be confirmatory one of the other. The findings of two different boards ought to be sufficient to fully establish the physical condition of a claimant, without the necessity of his being compelled to incur the expense and delay of repeated examinations. But is such the case? In many instances, it undoubtedly is not. Why should this condition of affairs exist? Are we to seek the cause in the department, in the claimant, or in the examiners? Does the fault rest in one or in all? It is reasonably certain that it cannot be attributed to the variable conditions of the disabilities on which the soldier rests his claim. Neither can we expect to find it in the perverted history furnished by the claimant, as the great bulk of such are irreproachable in their integrity. Nor should we expect to locate it in the department, where so high a degree of efficiency has been attained.

May it not be due in a large degree to some of the methods which examining boards are allowed to employ? May it not arise from the inefficient and superficial examinations which some boards occasionally allow themselves to give to the soldier? May it not arise from the formation of too hasty conclusions, arrived at without giving patient and considerate regard to actually existing pathological conditions? And does it not often arise from the gross mistake of endeavoring to examine so many applicants at one meeting as to render

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it practically impossible for the board to do its work thoroughly and well, to say nothing of the utter inability of the Secretary to properly transcribe the findings?

On the other hand is it difficult to imagine how it can easily result from so few examinations being referred to some boards, as to engender an actual indifference concerning the character of the services which they render?

It is quite possible—yes, even probable—that more than one factor enters into the cause of much of the ineffective work which has sometimes been done, the repetition and continuance of which ineffectiveness, it should be one of our highest ambitions to prevent.

In locating this undiscovered cause, let us examining surgeons be sufficiently liberal and lenient to others as to accept for ourselves the maximum responsibility for the existing defect. But in so doing, let us not rest content until we have so far perfected ourselves in the art of diagnosis that only a minimum of criticism shall attach itself to our future methods.

THE PRESIDENT:—Is there any further business to come before the Association?

A MEMBER:—Will the subject of the place of our next meeting come up this afternoon?

THE PRESIDENT:—I think that is left to the Executive Committee.

Dr. Hill, of Vermont, brought up the subject of compensation for the Secretary and Treasurer for the coming year, calling attention to the large amount of work done during the past year, and to the still larger amount which would devolve upon them during the coming year and suggesting that these officers be given stated compensation. Dr. Wheeler, of Massachusetts, agreed with the previous speaker, but believed that the whole matter came properly within the scope of the Executive Committee. Dr. Fox, of Connecticut, moved that the Secretary be paid a salary of $200 per annum. The motion was seconded. Dr. Rider, of New York, stated that, personally, he did not wish to be the beneficiary of such a motion, put through in haste, at the close of the annual meeting, and that he knew that Dr.

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Glidden, the Treasurer, held similar views. At Dr. Rider's request, Dr. Fox withdrew his motion.

At 3:46 p. m., on motion of Dr. Rider, the Association adjourned, subject to the call of the Executive Committee.

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Defects In, and Suggestions for the Improvement of the Reports of Examining Surgeons*

By J. F. RAUB, M. D.

Medical Referee (1897-1902), Bureau of Pensions

NEARLY five years ago, while discussing the duties and requirements of Examining Surgeons with several of these surgeons who were visiting the Bureau, they were informed that the Commissioner was very much interested in divorcing these agents of the government from the idea that those who were ordered before them for examination had certain peculiar claims upon them. An effort was made to impress them with the fact that they must not be influenced by the importunities of claimants or their attorneys; that a full performance of their duty consisted in making a thorough and searching examination, and furnishing a complete, comprehensive pen picture of the condition found, with even justice to the government and the applicant—that they must always be impartial.

I suggested to them to organize into an association,—state or national,—and expressed the conviction that such an organization would result in inestimable good to all, because the meetings would give opportunity to confer about methods and to discuss plans for improving the service. Assurances were given then, and have been since, that the suggestion was a good one, and that efforts would be made to secure such an organization. Nothing came of it, however, until you gentlemen took hold of the matter.

I greet you as pioneers. I congratulate you on your success. I congratulate you on bringing face to face so many of the more than four thousand five hundred Exam-

*Read by invitation at the first annual meeting of the Association.

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ining Surgeons upon whose faithful, unbiased reports both the government and the great body of Union ex-soldiers necessarily rely for a just adjudication of pension claims. The magnitude of your work and the great interests involved are made manifest by the fact that during the fiscal year ending June 30, 1901, nearly two hundred thousand examinations were made, as many certificates sent to the Bureau, and $910,000 in fees paid therefor.

An experience of eighteen years as an Examining Surgeon for the Bureau gave the present Medical Referee an appreciation of the labors and responsibilities of the office. His services as a Medical Examiner and Reviewer in the medical division of the Bureau for nearly seven years immediately preceding his appointment as Medical Referee, gave him a very thorough knowledge of the character of the reports, the certificates furnished by Examining Surgeons.

It was an undisputed fact, admitted by everyone who had to do with the adjudication of claims that, in those days, these reports were, as a rule, incomplete, not sufficiently comprehensive to do justice to the claimants; that very little thought was given to pathological sequence; that either great ignorance was displayed, or inexcusable carelessness manifested as to such sequences. It was then the rule, and not the exception, to accept as a pathological result anything that a claimant might allege, however contrary it might be to the best authorities. Furthermore, Boards would complacently declare that because they could not account in any other way for the presence of a certain disability, it was of necessity due to the pensioned cause, notwithstanding there could be no possible connection between the cause and alleged effect.

A sailor alleged that he contracted "lead poisoning from eating fish that sucked the copper bottoms of ships," and a Board of Surgeons accepted such a relation.

One Board reports that the claimant has "neurites anterior branches of sciatic nerve from frosted feet," while another says: "Claimant complains of frequent urination, a condition caused by the excessive use of tobacco."

It is the experience of the Medical Examiners and Reviewers of the Bureau that too many Boards have very little

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appreciation of their duties, and very little regard for the interests of the claimant or government. It is too much a question with them of the number of examinations they make and the amount of fees that may be coming to them at the end of the quarter. The whole system of employment of the members of the Boards of Examining Surgeons is faulty in this: that it fails to guarantee the best talent for these places, and so long as influence alone shall determine who shall be appointed, the Bureau will fail to secure the best results.

It too frequently occurs that one is recommended and receives appointment on the ground that he stands well in his community as a general practitioner, but who by reason of lack of education is totally unfitted for the position of Examining Surgeon; who is not able to construct the simplest sentences correctly, misspells the simplest words, and shows in the description of disabilities an utter lack of professional knowledge, even confounding "mensuration" with "menstruation," "Eustachian" tubes with "Fallopian" tubes, etc.

A certificate was returned to an Examining Surgeon in North Carolina with directions to report the results of mensuration, palpation, auscultation and percussion of the chest. He returned it with the reply: "I did not know a man mensurated. I never heard of it before and I know no way they can."

A Tennessee Examining Surgeon declares: "I find him suffering with chronic rheumatism or lumbago of his hips and back, also with some heart trouble as *Endometritis*."

A Kansas Board reports: "Urine reaction neutral, *ophthalmoscope* reveals mucus and epithelial scales."

A Pennsylvania Board reports that "By closing the mouth and nares and blowing, air passes through the *Fallopian* tubes and ears, and can be heard at a distance of twelve feet." Another Pennsylvania Board reports "that his stools are thin and triangular in shape."

A Massachusetts Board reports the soldier "to be suffering from a severe wound in the *right arm* of a long duration. It has the appearance of a bulliet wound entering at the one extremity of the tendo Achilles and making its exit at the

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plantaries, just above the elbow, thus producing a partial blood poisoning and necropsy of the bone."

One of the New Jersey Boards says: "There is evidence of *astigmatism*, the optic disc is oval and the vascular supply being all perpendicular."

These, but a few of the hundreds, are noted to give you an idea of the difficulties that are encountered in the adjudication of claims—the ignorance, the carelessness and the indifference displayed by many Examining Surgeons.

It is to the credit of many Boards that they take an honest pride in their work and are furnishing satisfactory reports. Their certificates show intelligence, care and thoroughness in the examinations, and an honest endeavor to report the actual condition of those examined. Too many others, however, apparently regard their duties and obligations in the lightest imaginable manner, their certificates bearing evidence of work done in a slipshod, haphazard manner. This faulty work is most frequently apparent in the inaccurate descriptions of disabilities and in the use of practically the same phraseology in describing necessarily varying forms of the same disability in different individuals. For instance, one Board in twenty consecutive examinations found valvular disease of the heart and described it in practically the same words in each case. Test examinations failed to confirm these reports.

Many Boards apparently have no conception or appreciation of the importance of their duties, and quiet their consciences by submitting machine-made reports that are in the highest degree unreliable and unsatisfactory. One Board regarded its duties as fully performed when the Secretary, having examined the claimants at his office, merely conferred over a telephone with the other members, after which all of them certified that they were present and personally participated in the examination.

Examining Surgeons, in their zeal for their patrons, constitute themselves, in many instances, the agents of the claimants. I might instance the case of one who during a stated time participated in three examinations of a claimant, in each examination certifying to the fact contained in the certificate showing that the claimant was not disqualified for

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earning his support by manual labor, and yet, during the same period, filed five *sworn* statements testifying that the claimant was totally disabled for the performance of manual labor.

Both in personal interviews and correspondence, Examining Surgeons have declared their fears that by recommending just and equitable ratings they would excite the enmity of the claimant and his friends.

Attention is invited to the conditions under the present system, to give you some idea of the difficulties with which we have to contend. It is, after all, not wholly the fault of the Examining Surgeons, but is, in a large measure, due to the system under which they are employed and assigned to work.

Under the practice which obtains, a Board of Surgeons is, after appointment, immediately assigned to work and proceeds to examine claimants—without previous instruction and without the remotest idea of what is required and absolutely necessary for the intelligent adjudication of claims by the Bureau, and as a result, certificate after certificate must be returned for amendment, for a full and clear description of disabilities, and even then many claims must be medically adjudicated on imperfect and unsatisfactory reports of Examining Surgeons.

No business man could be induced to place a man in an important, responsible position with no prior experience or instruction in a single part of the work which he is called upon to perform, yet these Examining Surgeons, without experience, instructions or advice, are appointed and assigned to the work of furnishing to the government the data upon which nearly one hundred and forty millions of dollars are disbursed annually.

It has been the endeavor of Commissioners of Pensions to bring about a change in the system. The Medical Referee has, year after year, recommended, and the Commissioner has urged, that these surgeons should undergo an examination to test their scholastic and professional fitness for the place, and that after having shown their fitness, they should undergo a course of instruction in the examination of a claimant, and in the construction of certificates. So far, no dis-

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position has been shown on the part of Congress to make any change, and we must get the best possible results under the existing system. The excuse for dwelling at such length on this phase of the Examining Surgeon's duties is the fact that the results of examinations are so unsatisfactory; that many Boards fail to understand the importance of their duties, and do not appreciate that the government must be considered as well as the claimant; that the government pays nearly a million dollars a year to the Examining Surgeons of the Pension Bureau; and that their reports—these certificates—are made the basis for the disbursement of one hundred and forty millions of the government's money every year.

Many Examining Surgeons have expressed the fear that in doing their duty fearlessly they will loose the good will of soldiers residing within the limits of their respective practices. They forget that the Medical Referee, and through him, the Commissioner of Pensions must assume the responsibility of disposing of the claims upon their individual merits. They fail to realize the magnitude of the work, they do not appreciate the fact that the whole output of the annual appropriation for pensions is made chiefly on the reports they furnish and the recommendations they make to the Bureau.

The following copy of a certificate made in a claim for ventral hernia by a Board in a city of Illinois, as late as October, 1898, is cited to give you an appreciation of the difficulties with which the Bureau has to contend under the present system, and the necessity of a rigid scrutiny of the reports of Examining Surgeons, and the absolute necessity foi re-organizing some Boards:

> "We find that when the right side of the abdomen is not supported, the contents drop down into the iliac region. The attachments of the diaphragm have torn loose, the contents of the abdomen have thus fallen down, it is impossible for him to have an action of the bowels, so that it is necessary to raise them up. It causes him great pain when they are down, sometimes rigor. In order to hold them up he has to ware a wide, hard band around the body which has to be stuffed with pleggets of cloth, where it is not perfectly tight. This

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band has to be as tight as he can possibly make it. Mucous membrane of rectum relaxed. Vessels engorged, one tumor on each side one inch in diameter."

The Medical Referee and the more than sixty medical men under him, dispose, on an average, of about eight hundred claims a day, and necessarily, a large number of these must be rejected, for the reason that many claimants are receiving the maximum rate that can be granted them under the laws, and many others are shown to have no ratable disability.

This responsibility these officials must assume, whatever unfriendly criticism may be passed upon them. Should not the Examining Surgeons assume theirs as well? The acceptance of the position and the oath of office they take before entering upon their duties, carry with them the promise that their reports will be unbiased and impartial, and those who have not the courage to make such reports should resign.

Instead of this, however, too many surgeons, after writing reports, fearing that the Bureau will take these at their actual worth, recommend ratings that are not warranted by their descriptions. When the claimants charge that the failure of the Bureau to grant a rate as large as they hoped for is due to the report of these surgeons, they say: "We gave you a good rating—it is the Commissioner of Pensions and those under him who have rejected your claim." You can readily understand how this embarrasses the Bureau.

It has been pointed out that one prominent cause for the receipt of so many unsatisfactory certificates is the fact that Examining Surgeons receive no instructions prior to entering upon their duties. No one appreciates this more than the Commissioner of Pensions and his Medical Referee. These officials have not the means of correcting this. They must execute the laws, and must do it with the means that Congress gives them.

It was believed, however, that much could be done to assist the Examining Surgeons by furnishing them with full instructions for their guidance. With this in view, the book of instructions was carefully revised. In its present

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form it has received the commendation of the Surgeon-General of the Army, and is used in the school of instructions for newly appointed medical officers of the army. It has been supplemented by special instructions and by a carefully constructed letter indicating the points specially required of Examining Surgeons. It is believed that any fairly intelligent Examining Surgeon, if he familiarizes himself with these, and has an honest desire to do his whole duty, cannot fail to give satisfactory reports.

There was a time when all that was required of Examining Surgeons was to give a description of the disabilities for which pension has been granted, or for which pension was claimed. As time elapsed, it was found that this was not sufficient. After a lapse of a quarter of a century since the close of the War of the Rebellion, claims began to be filed for disabilities that were alleged to have been incurred during the war and in the service. No record of the existence of such disabilities in service was found in the War Department, and with so many opportunities for contracting them since, it became necessary, so as to protect the government against false claims, to secure, as far as possible, a trustworthy record of the physical condition of each claimant at the first opportunity.

The need of a thorough examination of every disability found, whether alleged or not, became imperative on the passage of the Act of June 27, 1890. This was made necessary under the requirement of the Act that each claimant's capacity for earning a support by manual labor must be considered in the adjudication of the claim.

> Section 2 of the Act provides "That all persons who served ninety days or more in the military or naval service of the United States during the late War of the Rebellion, and who have been honorably discharged therefrom, and who are now or may hereafter be suffering from any mental or physicial disability or disabilities of a permanent character, not the result of their own vicious habits, which so incapacitates them from the performance of manual labor as to render them unable to earn a support, shall, upon making due proof of the fact, according to such rules and regulations as the Secretary of the Interior may provide, be placed upon the list of invalid pensioners of the United States and be entitled

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to receive a pension not exceeding twelve dollars per month and not less than six dollars per month, proportioned to the degree of inability to earn a support; and in determining such inability, each and every infirmity shall be duly considered, and the aggregate of the disabilities shown, be rated."

The book of instructions, edition of 1900, aimed to inform Examining Surgeons of the differences in the requirements under the general laws, and the Act of June 27, 1890. On its receipt by Examining Surgeons, the Bureau was flooded with letters asking for explanations and interpretations. So little attention was paid to these instructions; such a great degree of inharmony existed between the conditions actually described and the rates recommended; such a large number of certificates were furnished showing indifference and machine methods in the construction; so large a per cent. had to be returned for better description or to have the ratings and descriptions harmonize—in fact, such an utter lack of compliance with the requirements of the instructions was shown, that, on June 30, 1900, a special circular was formulated and mailed to each Examining Surgeon in the United States.

This circular, as you remember, quoted the second section of the Act of June 27, 1890, as amended by the Act of May 9, 1900, and this was followed by specific instructions, to wit:

"The basis of ratings under this section is inability to earn a support by manual labor, due to any mental or physical disabilities of a permanent character not the result of the claimant's own vicious habits. There are *no schedule rates for incapacity resulting from any separate or combined disabilities.* The degree of disability for earning a support is based on the aggregate of disabilities permanent in character, found on medical examination. If a pension is allowed under this section, it will be either for six dollars, eight dollars, ten dollars, or twelve dollars per month, six dollars being the minimum and twelve dollars the maximum.

The Act of April 4, 1900, requires that the report of Examining Surgeons shall specifically state the rating to which, in their judgment, the claimant is entitled. This will be determined by giving due consideration to each and every infirmity, and rating the degree or ex-

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tent to which all of these infirmities, whether minor or serious, when considered together, render the claimant unable to earn a support by manual labor. The result will be stated as $6, $8, $10 or $12 per month, and not as 6-18, 8-18, 10-18, etc., nor should there be a separate rating of separate disabilities as heretofore.

When in the judgment of the Examining Surgeons the aggregate of the disabilities disables the claimant in a degree materially affecting his capacity for earning a support by manual labor, the minimum rate of $6 per month will be stated, and when the claimant is wholly unable to earn a support, or nearly so, by reason of his infirmities, the maximum rate of $12 per month will be stated. For intermediate degrees of disability, the rate of $8 or $10 per month will be stated according to the degree of disability.

Bear in mind that the maximum rate of pension under this section is $12 per month, and that even if the claimant should be so disabled as to require the regular aid and attendance of another person, a higher rate cannot be allowed and should not be recommended.

The age of the claimant is an important factor in fixing the rate. A claimant who has reached the age of seventy-five years is allowed the maximum rate for senility alone, even where there are no special pensionable disabilities. A claimant who has attained the age of sixty-five years is allowed at least the minimum rate unless he appears to have unusual vigor and ability for the performance of manual labor in one of that age. The effect of partial senility should be considered with other infirmities, where there are such, and the aggregate incapacity rated.

The certificate must state whether the several infirmitites are permanent, and whether they are the result of the claimant's own vicious habits. Only those which are of a permanent character, and not the result of the claimant's own vicious habits can be considered in fixing the rate.

The certificate must give a full and accurate description of each and every disability in accordance with general instructions issued February 16, 1900.

It is desirable for the proper adjudication of the claim that each report of examination shall contain an exact pen picture of the condition of the claimant and an accurate and painstaking diagnosis of his infirmities in such detail as to medical terms and descriptions as will enable the medical officers of the Bureau to determine accurately the condition of the claimant."

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It was hoped that by a careful study of these special instructions, each Board of Examining Surgeons would be able to furnish satisfactory reports. It is evident that it was carelessly read by many, or not read at all, because the Bureau receives almost daily letters similar to the following:

> "This Pension Examining Board has received several communications from you recently instructing us in our duties as Examiners, but nevertheless, we have to admit that we feel that our understanding of your requirements in our recommendations of ratings under the act of June 27, 1890, are not clear and definite enough, which vagueness we attribute largely to your qualifying phrases, to your definite statements.
>
> By the Book of Instructions (Ed. 1900) specific rates are named in the tables and among these are five rates below the minimum rate under Act of June 27, 1890, and in connection with those rates the first two lines particularly, of Par. 127, Book of Instructions, have led us to giving weight and consideration to such minor disabilities in our aggregate for a rate under the Act of June 27, 1890.
>
> Please advise us whether we shall give weight and consideration to such minor disabilities when two or more of them would aggregate $6, the minimum rate under act of June 27, 1890."

It must be evident that Examining Surgeons who will write such a letter can have no conception of the intent of the law or of their duties. What intelligent surgeon, or layman even, would regard an ordinary nasal catarrh, so common in this latitude; the loss of a part or the whole of a finger; slight deafness of both ears, or total deafness of one ear; a few small non-inflamed piles; a slight bronchitis; a varicocele; a small hydrocele; creaking of the joints without limitation of motion; a liver extending a fraction of an inch beyond the accepted average limit; an uncorrected refractive error; a senile arc; a presbyopia; a small ventral hernia; the loss of some teeth; and many other minor disabilities, as disabling a man for earning a support by manual labor? Every day a number of certificates are received wherein Boards declare that the aggregate of disabilities for earning a support by manual labor is due to one or more of

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these trifling ailments, and recommend a rating therefor of from six dollars to ten dollars.

A large per cent. of Boards exercise no judgment as to what constitutes a factor in the causation of an inability to earn a support by manual labor. For example, a Board in Oregon, under date of April 2, 1902, concludes a certificate with this statement:

> "We find that the aggregate permanent disability for earning a support by manual labor is due to his disposition and Christian belief, not due to vicious habits, and warrants a rate of $6."

This can be accounted for only in two ways. First, that no thought is given to the matter; and, second, that the members of these Boards did not experience the delight of earning their bread by the sweat of their brows, previous to entering upon their professional career. Surely, if they had had the experience in this direction that some of us have had, they could appreciate the fact that even a number of more serious disabilities than these would be no appreciable handicap in the workingman's race for subsistence.

It seems exceedingly difficult for many Boards to differentiate between the principle of ratings under the general law and the Act of June 27, 1890.

It would appear that the whole difference is expressed in this—that under the general law it is a question of a *disability for the performance of manual labor*, for which the ratings range from two dollars per month for a very slight disability to thirty dollars per month for total disability for manual labor; while under the Act of June 27, 1890, it is a question of a disability for *earning a support* by manual labor, for which the lowest rating is fixed at six dollars per month, and the highest at twelve dollars per month. The disability warranting the maximum of twelve dollars per month under the Act of June 27, 1890, must be practically as great as that which entitles to thirty dollars per month under the general law. Surely it should not be difficult to distinguish the difference in the method of rating under these laws.

Neither the Commissioner of Pensions, the Medical Referee, nor the Examining Surgeons, have any right to let sentimental feelings control the performance of their duties.

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They must comply with the laws as Congress gives them, and as the Secretary of the Interior construes them. It is not a question of what we would like to do, but a question of doing our whole duty under the laws. It is not a question of what we in our sympathy may believe should be done, but of what the law requires us to do.

Many Boards of Examining Surgeons continued to exhibit great indifference in the manner in which certificates were constructed, gross ignorance of their duties or incompetency to make a thorough systematic physical examination, or persisted in rating on subjective symptoms—the statements of the claimant or the representations of the attending physician, especially if he happened to be a member of the Board—notwithstanding instructions to the contrary.

The special letter of instructions of January 3, 1901, was mailed to each Examining Surgeon, inviting attention to the defects in the examination and the violation of the instructions. Each was advised that the Commissioner had been compelled to dismiss a number of Boards, and that a continuance of such conduct would result in dispensing with the services of those offending. Boards were also advised by the Commissioner that he would "insist that Examining Surgeons, in rendering opinions as to pathological results, shall be guided by the best and most recent authorities on pathology and not, as is too frequently the case, accept conditions as pathological sequences when neither medical authority nor common sense warrants such acceptance." Boards were further advised that "An Examining Surgeon who is not fully informed in the best and most recent authorities on pathology is of very little use to the Bureau; on the contrary he is an embarrassment, a hindrance to the proper adjudication of claims." He declared it to be his determination "to secure for the government and the claimants the best talent obtainable, * * and to replace all Examining Surgeons who are found to be incompetent or indifferent, with those who are competent and who are willing to give their services to the performance of their official duties."

Since then, a more careful scrutiny of the certificates has been made, with the result that the services of quite a number of Examining Surgeons have been dispensed with

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and other Surgeons have been appointed in their places. Now, much better certificates are received, although quite a number of Boards do not yet measure up to the standard desired.

An Act of Congress, approved July 25, 1882, requires "That all examinations shall be thorough and searching and the certificate contain a full description of the physical condition of the claimant at the time, which shall include the physical and rational signs and a statement of all structural changes."

Let me invite your attention to some of the more important errors that certificates of examination contain.

One of the most unsuccessful efforts has been that of making Examining Surgeons appreciate that pensions can only be predicated on objective conditions—on actual pathological changes. It is a common occurrence for a Board to make a statement similar to the following: "Soldier contracted diarrhœa in 1864 and has suffered with it since. He has from ten to twenty evacuations daily. Sometimes he passes blood; he is worse in summer than in winter, and we find his disability total, entitling him to $12 per month." Not a single rational symptom is given; the certificate could as well have been written by a layman as by a physician; and yet the claimant was ordered for examination by a physician, for the reason that only a physician could give a diagnosis and sustain the statement of it by giving the rational and physical signs. Such a certificate is worthless, for the reason that the surgeon knows absolutely nothing of the accuracy of the statement. Another form of statement, equally worthless, is as follows: "Soldier was wounded at the battle of Gettysburg, in 1863, remained in hospital until November and was discharged. He has been unable to earn a support ever since." Again, certificates contain statements like the following: "This claimant contracted rheumatism at Petersburg, 1864; it affects his shoulders, back and hips. His shoulders are stiff, he can only raise arms to horizontal; he cannot stoop to reach the floor with his fingers; he cannot flex thighs, and is entitled to $\frac{17}{18}$." The surgeons, in stating the time and place of incurrence of the disabilities, certify to that of which they know nothing. It is frequently

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the case that claimants cannot prove the incurrence as they claim. Even if a surgeon did state it of his own knowledge, the statement is of no value to the Bureau, which must determine all such matters by reference to the records of the War Department. Furthermore, medical examinations are made to determine the claimant's physical condition, and not the legal status of the claim.

The question in every case is *what does a careful examination show?* If a pathological condition exists, it should be so fully and clearly described that the medical officers of the Bureau can understand the claimant's condition as fully and intelligently as did the surgeons who examined him. To do this, a statement of limitation of motion of joints, based upon the claimant's voluntary movements, cannot, for obvious reasons, be accepted as conclusive. It must be based on the results of passive motion, and on this alone. Again, a statement that a claimant cannot stoop to touch the floor with his fingers, or reach it within more than a certain number of inches, furnishes no information. So much depends on the man's occupation, the size of his abdomen, whether he has practiced athletic exercise, and, more particularly, his inclination, or rather, his disinclination. Only the objective conditions—the pathological change in the physiological structures of the joints and the muscles of the back, can be taken to determine the degree of disability.

Statements of few or many dejections due to diarrhœa prove nothing. A clear, comprehensive pen picture of the conditions of all organs affected by this disease, including the general nutrition, must determine the pensionable degree of disability.

Boards too frequently are influenced by the plaintive story of suffering, made, as a rule, to influence their action, instead of by the actual condition as shown by a careful and thorough physical examination. They add the value of a rather insignificant disability to the value which their sympathies place on the claimant's plaintive story, and rate, probably twenty-four dollars, or even thirty dollars, for a disability, their own description of which would warrant from four to eight dollars at the utmost.

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If your patience is not exhausted, I will endeavor to point out specifically the most common defects in certificates of examination:

Failure to locate on diagram all scars and losses of parts; to outline the form and extent of scars, ulcers and varicose veins, and the exact point of amputations.

A general disposition to recommend a rating somewhat in excess—say two dollars—of that which the claimant is receiving, notwithstanding that the disability is not progressive in character—such as permanently healed gunshot wounds or other old traumatic disabilities.

Duplicating and triplicating descriptions and rates for the same disability or diseased condition, as, for instance, when disease of stomach, chronic diarrhœa, and malarial poisoning are alleged, the pathological conditions due to which may properly be described and rated under either one of these designations.

Gunshot wounds and other injuries and scars are located on the diagram, and Examiners content themselves by saying, "See diagram," without reporting the degree of deformity, loss of tissue or impairment of motion and power resulting therefrom, although a rating indicating a serious disability is recommended.

The descriptions of rheumatism are often incomplete. One or more joints may be described as affected by swelling or stiffness, without giving comparative measurements and without reporting the degree of limitation shown on passive motion, the condition of other joints, muscles and tendons being left to be inferred by the medical officers of the Bureau.

In reports of the condition in disease of heart, the apex-beat is located so many inches below and to the right of the nipple, instead of by costal interspace and distance from *nipple line*. The conditions shown by auscultation are reported after exercise, instead of after claimant has been at rest. The question is frequently asked, "Why does the Bureau refuse to accept the statement, 'The heart is normal'?" I answer, in the first place, it frequently happens that other certificates in the cases have reported organic valvular disease of the heart, and if the statement, "The heart is normal,"

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were accepted as conclusive, the claimant's name would have to be dropped from the rolls. You can appreciate that it would be unusual and questionable to take such action on a statement of this character. Then, again, from such a statement alone it would be impossible to determine whether or not a careful examination of this organ was made.

The descriptions of the rectum are too brief—do not cover or embrace all the requirements of the instructions.

Failure on the part of Boards to equip themselves with test lenses, and to give vision after the correction of existing refractive errors; failure to test vision in accordance with accepted methods. Pension cannot be granted for impaired vision which can be corrected by proper glasses.

The test for deafness is not made in accordance with instructions. While the distance at which the standard tones of voice *cannot* be heard is given, the distance at which they *can* be heard is not given. The latter is just as essential as the former. You will see the force of this statement when you are advised that slight deafness of one ear is "inability to hear ordinary conversation at six feet," and severe deafness of one ear, "inability to hear loud conversation at three feet." It often happens that a claimant refuses to admit that he can hear loud conversation at three feet, yet when off his guard, he hears ordinary conversation at one foot or six inches, showing conclusively that he can hear ordinary conversation at some distance, and under the practice his deafness can only be rated as slight. Again, a claimant may claim "inability to hear loud conversation at three feet." The question is, does he hear it any distance, for, under the rulings, so long as he can hear loud conversation at all, even with the lips to the ear, he can be rated for severe deafness only.

Failure to dispose of all disabilities alleged, and to paragraph properly; illegible penmanship; repetition of descriptions of a disability under different heads; separate ratings for each disability instead of the aggregate rating, in claims under the Act of June 27, 1890; rating deafness in eighteenths instead of thirtieths; using the statement "habits good," instead of the prescribed formula; only one witness, or two members as witnesses when claimant's signature is by mark;

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failure to state whether hernia is direct or indirect, or whether it passes the external ring; recommending excessive ratings not warranted by the pen picture—these are some of the more frequent defects in certificates.

While Examining Surgeons are prohibited from revealing the result of an examination to a claimant or other person, and from discussion or correspondence with a dissatisfied claimant, yet they are permitted to make affidavits or statements in pension claims of which they have professional or other knowledge, in the same manner as other physicians.

Attention has heretofore been invited to the manner in which this privilege is abused, in the case of an Examining Surgeon who certified that the claimant had no pensionable disability, and then in a number of affidavits, no doubt furnished for "revenue only," swore that the claimant was seriously disabled.

In these cases, the certificate of examination is the Bureau's sheet anchor, but in the claim of a widow under the general law, where her right to pension depends entirely on the death of her husband having been due to a disability of service origin or to a pathological result thereof, the only safety against affidavits that are made in the interest of a claimant, depends on the knowledge the medical officers of the Bureau have of authoritative pathological sequences.

It was only a few weeks ago when a prominent physician of a noted summer resort of New Jersey furnished the death certificate to the State authorities that a pensioner's death was due to valvular disease of the heart. When the widow filed her claim, a sworn copy of this certificate was filed. The only disease for which legal approval could be made was neurasthenia, and consequently the claim had to be rejected on the ground that there was no pathological relation between neurasthenia and the disease of the heart from which the soldier died. The widow made an application for a re-opening of her claim, based on a long statement from the same physician. In this statement he swore that the soldier died from an acute attack of broncho-pneumonia, complicated with an acute attack of La Grippe, accompanied with mitral insufficiency, aortic stenosis and general arterio-sclerosis; and then argued that all these troubles were

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the direct results of neurasthenia. Re-opening was denied. He personally came to the Bureau to argue the case with the Medical Referee. To the suggestion that he file a list of the authorities upon which his contention was based, he frankly admitted that he could find none. He further declared that had he known that his certificate would be used in a pension claim he would have made a different report. When asked why he did not give the death cause to the authorities as neurasthenia, he replied that the State medical authorities refused to accept it, knowing that the soldier died from other causes. He acknowledged that his certificate and subsequent statement contained the actual facts, yet he had the effrontery to declare that if he could withdraw them he would make the statement that the death was directly and immediately due to neurasthenia, so that the widow might get a pension. He was informed that such a statement would not be worth the paper it was written on, in any court, and then to his utter amazement he was informed that had he made a sworn statement, making the so-called neurasthenia the death cause, the claim would necessarily have been rejected on the ground that syphilis could not be eliminated, for the reason that the soldier had a record of primary syphilis, a severe attack of syphilitic iritis, and, subsequently, all the manifestations of tertiary syphilis. This too, was a case of an affidavit "for revenue only." Cases of this character come under observation daily.

The following affidavit from an Examining Surgeon in Kansas, made in 1898, in another widow's claim, is to the point:

> "I made a thorough examination of him at that time, and made eight visits from that time until his death. When I made the visit in July I found that the spinal irritation had increased. His bronchitis had become so intens that his lungs was nearly overflowed with mucus and pus. He was expectorating profusely and in great quantity. His lungs was so full that it sounded like abscesses of his lung, but I am of the opinion that it was only an excess of mucus cutting air off from air cells which would give the lung symptoms. I am certain that the original cause of his death was rheumatism which caused paralysis of his back, said paralyzed condition allowed his spine to fall forward which caused pressure

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upon the spinal cord, and resulted in spinal irritation. The spinal irritation caused the nerves which supply the bronchial tubes and lungs to lose all sensation. Losing said sensation, the mucus accumulated in excess in bronchial tubes and lung cells causing symptoms of abscesses which so diminish the airating surfaces he could not live. In such condition he died on August 22, 1897. While his immediate death was caused by overflow of mucus and pus in bronchial tubes, the original cause of his death was rheumatism. The spinal irritation and excessive mucus and pus in bronchial tubes and lungs was result of rheumatism, causing paralysis of muscles of back, which resulted in spinal irritation and bronchitis and disease of lung tissue."

It is no surprise to the medical officers of the Bureau to receive affidavits like this, but when a Board of reputable physicians, in a certificate of examination dated February 5, 1902, makes the following statement: "Applicant's muscular development is very poor, just why it should be so we are unable to state; the best we can describe it would be to say the muscles are slowly evaporating," it must be concluded that some Examining Surgeons regard their duties as a huge joke. Perhaps the Board was influenced in accepting the theory of *evaporation* by the fact that the claimant's name was *Booze!*

As heretofore said, the certificate of medical examination is the Bureau's sheet anchor. It is the rule in the Bureau to rely on the reports of Examining Surgeons and it is not usual to accept any evidence to controvert such reports. You can appreciate, therefore, the embarrassing position in which the medical officers of the Bureau are placed when it is shown that Examining Surgeons have not been candid and honest in their reports, or when their reports show such a lack of general intelligence and professional knowledge as to make them unreliable.

About a year ago an affidavit was filed from a member of a Board in Tennessee, declaring that a pensioner who was ordered for an examination under a claim for increase was confined to his house and unable to appear before the Board. A member of the Board was ordered to visit and examine the pensioner at his home. The surgeon's report showed that the claimant was so totally and permanently

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disabled as to require the regular and constant aid and attendance of another person. Some doubt was entertained as to the existence of this degree of disability and as to its permanency, because no such claim had been made by either the claimant or his attorney when filing the application for increase. Another member of the Board was ordered to make a searching examination. His report confirmed the findings of the first examination, and the three members certified in the certificate of examination that each one was personally cognizant of the fact that the claimant required the regular and constant aid and attendance of another person, and was entitled to seventy-two dollars per month. The increase was then allowed from the date of the first examination.

As soon as it became known in the neighborhood of the claimant that he was receiving such a high rate of pension, information was filed to the effect that he was not confined to his house at the time of the examination; that he walked to his place of business every day; that he not only personally superintended his business, but every few days drove to a neighboring town about six miles distant. On an investigation made by a Special Examiner, it was proved conclusively that this claimant had not been confined to his house, but attended to his duties daily. The claimant testified that he had not been confined to his house; that he had not required aid or attendance at any time, except for about two months four years previous to the examination, at which time he had an acute attack of rheumatism; and that he was in his usual health at the time of both examinations. In fact, it was shown, and the claimant admitted, that he was as active as men generally are who are seventy-two years old.

It is taken for granted that there must have been an inducement for making such a report. The Board was suspended at once. After a suspension of one year, an application for reinstatement, urged by the Member of Congress from that district and by resolution of the Grand Army post of the town, was denied by the present Commissioner.

Three months ago another Board reported that the apex-beat of the heart of a certain claimant was located under the xiphoid cartilage, the upper border of the heart

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under the sixth rib and the lower border under the ninth rib, with a mitral murmur. The certificate was returned inviting attention to the almost impossible location of the heart as reported. The Board returned the certificate to the Bureau insisting that the description was correct. A test examination showed that the apex-beat was at the sixth rib, that the heart was in the normal position and that all its sounds were normal. The first certificate was rejected because it was unreliable and of no value to the Bureau, and the fee for examination was disallowed.

Conditions similar to these are encountered daily. Reports of Boards lack candor, facts are suppressed, ignorance is displayed. You will, I am sure, appreciate the necessity for vigilance, and a careful scrutiny of the certificates of examination before applying them to the respective claims. A Board in Ohio, in thirty consecutive examinations of young men who served about three months during the war with Spain, and who were not outside of the United States, reported irritable heart in each case and declared it was not due to vicious habits. This was so at variance with the experience of the Bureau that a special investigation was held. This investigation elicited the information that where the pulse rate was increased in frequency the heart was reported *irritable*. When the members of the Board were asked to account for the accelerated rate, they gave it as their opinion that it was due to the excitement of the examination and to cigarette smoking. If this statement had been given in the reports of the Board, an investigation would have been unnecessary and the Board would have been advised that any disability due to the cigarette habit must be excluded in the consideration of a pension claim under the general law.

In concluding, I desire to express my appreciation of the honor and privilege of appearing before so many of my learned brothers.

It has been our aim for five years to improve the service of Examining Surgeons. We have but one purpose—that of giving to deserving pensioners all the pension they are entitled to, and to deny pensions to the undeserving. No one could possibly appreciate more than we, the necessity

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for full and comprehensive pen pictures of their disabilities in the certificates of examination, whereon to predicate such pensions. We have aimed to improve the service of the Examining Surgeon so that claimants might receive what was due them.

The relations between the Medical Referee and the Examining Surgeons are necessarily of a close and confidential nature. This official has always solicited from Examining Surgeons correspondence relating to any matter in which information was desired and he has always given a prompt reply.

If, perhaps, this paper has been too long, or not as interesting as you may have anticipated, the earnest desire for the very best work obtainable from you must be the apology, and if the writer has succeeded, at least in a measure, in impressing you with your personal responsibility, he is repaid.

If, perchance, the Medical Referee has found it necessary to return certificates to any of you; or you have been advised that more satisfactory reports must be furnished, or that a reorganization of your Board must be made, let me assure you that it has been done without malice or feeling, with no thought except for the best interest of those whose claims are at issue, and of the government, whose interest must also be considered. It is the policy of the Bureau, as it is to its interest, to make as few changes of Examining Surgeons as possible. Its officials always protest against the displacement of experienced Examiners who give satisfactory results; while, on the other hand, they insist that Members of Congress recommend others in the place of those who fail to render satisfactory reports, or persist in violating the requirements of their instructions.

The progressive physician is one who is constantly looking out for that which will improve his mind and therefore improve his services to his patrons. The progressive Examining Surgeon is one who is on the alert for that which will assist him to make his services more valuable to the interests he represents. He, therefore, enjoys a conference with his fellow surgeons, and profits by an exchange of views. He furnishes the very best reports to the Bureau. His certificates are models in every respect.

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Your presence here to-day indicates that *you* are giving satisfactory service; that you have more than the usual interest in the performance of the duties incident to your responsible positions; that you are *progressive*; that you appreciate that, as in the great profession at large, there is benefit in occasionally meeting in a body and comparing methods, in discussing means to ends, in exchanging plans, in brightening your intellectual faculties by bringing them in contact with others.

There should result, and, no doubt, there will result a two-fold benefit. Each one present will be benefitted, and the service of the Bureau will be benefitted. You will gain some new, some beneficial thought, you will look into the faces of many of our co-workers, you will appreciate better the interests you represent, you will carry home with you the remembrance of the acquaintances you have made, and their interest and enthusiasm in their work will be an inspiration to you for years to come. You will have a higher regard for your positions, and a better appreciation of the responsible duties of Pension Examining Surgeons. You will have a more lively realization that you have an honored and responsible part in the disbursement of one hundred and forty millions of dollars annually to deserving soldiers, their widows and orphans, and a deeper sense of the necessity for conscientious and comprehensive reports upon which such disbursements must be made, and by rendering which you will honor and dignify both yourselves and your office.

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Rheumatoid Affections Considered as Pensionable Disabilities.

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IN presenting a paper upon rheumatism and its kindred affections for the consideration of this Association, the writer is fully conscious that he must necessarily follow well established lines, without directing attention to any new sources of information upon a subject so thoroughly and exhaustively discussed in the medical societies and journals of this and other countries.

Its place upon the program is due to the fact that ninety per cent. of the orders issued by the pension department for claimants to appear before examining boards, embrace among other alleged disabilities, some one of the different forms of rheumatism and therefore a brief consideration of the subject in its various bearings upon the earning capacity of claimants may well invite the mutual attention of those whose duty it is, to recognize and measure such disqualifications as result from these affections.

The time-limit of this paper forbids any extended review of the etiology and pathology of rheumatic affections so that the larger share of your attention will be occupied by those phases of the subject which bear upon

1. The anatomical changes produced by the rheumatic attacks.
2. The disabilities that result from such changes in the structures of the parts affected.
3. And the measure of such disabilities and their disqualifications for manual labor.

With the exception of those who served in the Spanish-American war it is but fair to assume, that nearly all the claimants for pensions are fifty-five years of age and beyond

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and that most of these claimants were recruited from the industrial and agricultural classes, and have followed—since leaving military service—such trades and occupations as require prolonged physical effort during more or less exposure to ever-varying changes of temperature; or, in other words, they have followed avocations under the most favorable circumstances for the development of some one of the rheumatoid affections about to be considered.

Therefore the frequency with which examining boards are confronted with the effects of rheumatoid affections is but a natural sequence of circumstances.

I. The Anatomical Changes Produced by the Rheumatic Attacks.

Either muscular or articular rheumatism in its acute form is rarely presented to the pension surgeon for his examination, as neither, as a rule, leaves its impress upon the claimant's system unless he be in impaired health at the time of the attack.

The natural tendency of both affections is to subside after having expended their force as completely as other infectious diseases as typhoid fever and pneumonia do under like circumstances.

In normally healthy constitutions they leave no structural changes or consequent disabilities in those claimants attacked.

The only evidence of a former existence of the rheumatic process is a morbid tendency to subsequent attacks. Should a claimant present himself with a localized acute arthritic rheumatism of a few joints—as for instance of wrist and elbow, or shoulder, or of knee or ankle, the presumption would be that he would be rated at the time as disqualified for manual labor by the surgeons before whom he appears—yet after a period of several months this same claimant having thoroughly recovered and again ordered to appear for examination, his rating at this time would doubtless be nil.

The writer is cognizant of a case of this class who having suffered several attacks that greatly debilitated the claimant and retired him from the pursuance of his occupation for months at a time, was subsequently presented for

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examination and upon the report of the board his claim was promptly rejected by the government. Upon filing another application for examination, he appeared while laboring under one of these recurrent attacks of the articular rheumatism, was found disabled in a pensionable degree and was awarded a pension.

This same pensioner afterward followed his occupation for years with a good record.

In from twenty to thirty-five per cent. of cases of the articular form of rheumatism, cardiac complications ensue not as a result of the disease but as a result of the same operating cause that produced the rheumatism itself, fostered perhaps by a reduced vitality of the subject or by a somewhat debilitated heart from overwork or impaired by some other antecedent cause.

The etiology of acute articular rheumatism has received a large share of attention from pathologists and the almost universally accepted theory of its origin is, that it is due to an infection—the specific cause operating upon the endocardium and pericardium in like manner as it does upon the synovial membranes—and upon the fibrous tissues of the heart muscle as it does upon tendons and muscles surrounding joints.

The evidences of endocarditis, pericarditis and myocarditis are found in the structural changes of the valves, lining membrane and the heart muscle itself.

These changes are thickening of valves, causing stiffness, rigidity and interference with their closure, hyperplasia of the endocardium with interstitial exudation producing elevations upon the free surface of the membrane, a plastic exudation upon the pericardium causing roughness and sometimes adhesion and finally thickening of the fibrous tissues and muscular degeneration of the walls of the heart.

Acute rheumatism, whether muscular or articular, affects contiguous structures to a greater or lesser degree—such as fasciae, tendons, sheaths and aponeuroses. The latter structures when involved sometimes become the seat of a most persistent and aggravated form of rheumatic pain without any anatomical characters or phenomena to indicate the same except soreness upon pressure and pain upon motion.

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The chronic forms of both muscular and articular rheumatism are those most commonly observed by the pension surgeon.

Claimants present structural changes of the grosser forms which weaken muscular power, lessen mobility of joints and ultimately produce such impaired function as to wholly or in part incapacitate them for manual labor.

Chronic muscular rheumatism may affect any or all the fibro-muscular structures especially when associated with a rheumatic diathesis. It is most commonly observed in the larger and more powerful muscles and these muscles being superficially located are thus the more easily exposed to damp and cold, and become the seat of the myalgic affection. These muscles are the erector spinæ, the latissimus dorsi, the trapezius, the pectorals, the serratus magnus, the external oblique and the deltoid.

A predisposing factor in attacks of muscular rheumatism is fatigue or strain of muscular fibre produced by continued physical effort or by some extraordinary tension put upon a single muscle or a group of muscles as in heavy lifting or by some sudden twist or bending of the trunk. These sudden calls for muscular contraction are favored largely by the trades and occupations of claimants.

The exciting cause is exposure after such muscular strain, to low temperature or to confinement to damp atmospheres or to draughts of air upon the parts. The effect of such exposure may only produce stiffness and soreness in the parts exposed or it may be shown by rigidity of muscles with excruciating pain upon the slightest movement. As seen by the examining surgeon the effects of exposure may be limited to a single muscle as the deltoid, in which case the claimant may be unable to raise his arm to a level with the shoulder, thus having but one-half of normal range of motion, or they may be diffused throughout a group of muscles as those of the loins and lumbar region making stooping or bending the body a difficult and painful matter. In the latter cases claimants do not curve the body forward but go down sideways when attempting to grasp objects upon the floor.

Muscular rheumatism may be developed secondarily from rheumatism of the joints, first spreading to the tendinous

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structures and sheaths and afterwards to the fascia and the muscles themselves, and there remain a fixed affection long after the joint trouble has disappeared. The writer himself experienced such an extension from knee joint to the surrounding tendons and afterward to the strong dense fascia covering the tibialis anticus and adjoining muscles.

The prominent symptom is pain which is disproportionate to the condition of parts as observed by the pension surgeon and is greatly exaggerated by motion of the muscles affected. Pain may be absent in repose of muscle, but when the latter is disturbed, is manifest in varying intensity. The dread of pain sometimes alone gives rise to the appearance of stiffness and rigidity. In addition to pain a diffused soreness may be recognized by pressure upon the muscular mass.

Upon inspection of the muscle or muscles no departure from a normal condition may be observed. Pathological investigations have rarely revealed any morbid changes in the affected muscles. Temporary hyperæmia or slight serous exudation may be found in the muscular structures shown by a fullness of the parts, according to some pathologists. Few if any recognizable anatomical characteristics have been found by others, to account for the disability and pain resultant from the morbid process, since no heat, redness, swelling, or changes in structure are apparent. According to some pathologists a neuralgic state of the sensory nerve filaments may be said to exist and therefore this affection is more of a neurosis than any well defined pathological process.

Therefore with the solitary symptom of pain with no corroborating evidence but claimant's own statements, the pension surgeon is confronted with a problem of considerable difficulty to solve in determining the actual as well as the ratable disability in such cases.

It is exceedingly hard to divest the mind of suspicion of malingering on part of claimant under such circumstances. He presents himself as an interested character with a natural tendency to exaggerate, and sometimes grossly so, the infirmities from which he claims to suffer. Particularly is this the case when the element of pain is considered and when movement of the parts affected is attempted. To de-

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cide however that pain in a part of the body does not exist because there is no abnormal appearance nor change in the anatomical structure of that part, is assuming too much. That pain of a wholly disqualifying character for manual labor may exist, the writer knows of his own personal experience with rheumatism when no other sign or symptom is recognizable, after the most searching examination, and that that pain may persist in its disabling characteristics for a long time, is also a well established fact not only in his, but the experience of others.

Before passing to the arthritic form of rheumatism, a phase of muscular debility which incapacitates a claimant for manual labor in part is a stiffness and soreness of muscles from their excessive use due to trades and occupations that demand special muscular effort. This disability can scarcely be called muscular rheumatism. It is an over-strained or cramped condition of muscles due to a high state of tension or a prolonged contraction of muscular fibre, a condition when a muscle or a set of muscles are put upon a stretch and kept for a time, in such constrained position as for example the shoemaker bending over his last, the carpenter in sawing or handling his plane, or the heater or puddler cramped and stooped for hours before their furnaces, who, after years of such labor, exhaust muscular power by constrained effort and produce a muscular debility from excessive use.

The two remaining forms of rheumatoid affections may properly be considered conjointly because both disable, disorganize and destroy the structures of joints either with or without hypertrophy or atrophy of surrounding parts.

Chronic articular rheumatism and rheumatoid arthritis are in the main, diseases of the after-middle period of life, consequently those claimants for pensions who served in the civil war are especially prone to present some phase of either of these two affections. Both affections may supervene upon acute attacks of articular rheumatism, although their etiology is believed to be wholly different. They generally originate in sub-acute or mild attacks which manifest a tendency to recurrence in those who are of a rheumatic diathesis.

In these forms of arthritic inflammation the anatomical characteristics range from a moderate enlargement of the

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joint or joints with slight œdematous condition of surrounding tissues with thickening of capsule and ligaments, to the more destructive inflammation and infiltration of joint structures progressing in some cases to erosion, and adhesions with fixation.

The ravages of such destructive processes may continue until the ends of bones are denuded, exposed and anchylosed. This anchylosis may successively attack one joint after another until nearly all the joints are involved.

In one case observed by the Norristown Board of Examining Surgeons the anchylosis began in the lower extremities and completing fixation in all the joints, then proceeded up the spinal column to cranium anchylosing each vertebral joint with the firmness and rigidity of a steel brace, so that finally the soldier's trunk became a fixed body like a log with no motion whatever upon itself. For months this man lay in a wheeling chair, unable to move anything but his right arm and hand in which he carried a fan to shield his face from the glare of the sun, when wheeled along the street by his valet.

The greatest deformity resulting from joint lesion is found in rheumatic gout or arthritis deformans. While the earlier development of the disease resembles very closely that of chronic articular rheumatism, yet the morbid anatomy presents lesions of the grosser kind at a later stage.

These alterations of structure are found in capsule, ligament and bone. They are thickening of cartilage and ligament, with proliferation of cartilaginous growths at the edge of the articular cartilage which become detached and form separate movable bodies together with the formation of nodes and osteophytes around the joints. The synovial membrane becomes dry and shrivelled, with a marked diminution of synovial fluid. The articular cartilages become destroyed and in some places absorbed, exposing the heads of the bone, which become eburnated, causing friction and a grating sound upon movement.

There may be either absorption to quite a considerable extent, or there may be consolidation of the articular surfaces, or there may be complete or partial dislocation of the joints. Tendons and their sheaths surrounding joints may be

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thickened until their free motion is markedly lessened and accompanied by a grating friction sound distinctly felt under the finger. The muscles adjacent to joint become atrophied and in some cases greatly so, or to use other phraseology, the body of the joint is grossly enlarged, while the contiguous portions of limbs are diminished in calibre correspondingly.

To the morbid effects already mentioned, may be added a condition of the muscles named by some authors as a true rheumatic atrophy, not from disuse, as in case of muscular rheumatism, but an atrophy that apparently manifests itself in a gradual and painless manner, while muscles are being used. This atrophy of muscles is of arthritic origin and the subsequent obliteration of all muscular power has been denominated rheumatic paralysis.

The writer has knowledge of two such cases—one a soldier, the other a lady, where all the phenomena in the cases point unmistakably to the cause of such loss of muscular power to be outside of the spinal cord and brain.

The fingers are sometimes bent laterally, usually toward the ulnar side and the phalanges partly dislocated, because of infiltration into and bony deposit around the entire joint.

These conditions with atrophy of the digital and metacarpal muscles so disfigure and distort the appearance of the hand that all semblance to its normal anatomy is in a measure lost and its usefulness destroyed.

2. The Disabilities Resulting from Changes of Structures of Joint and Muscle.

The disabilities resulting from the various forms of rheumatoid affections vary greatly in different individuals.

In some claimants after a history of a number of attacks, there is comparative freedom from any disability, only such symptoms as slight soreness and stiffness are found. Function of muscle, tendon and joint is restored to, or nearly to a normal degree, while in others, a greatly impaired condition of muscular strength with an almost entire abolition of joint function, follow a single severe and prolonged attack.

Stiffness and soreness lessen range of motion and such restriction may become a disability in one claimant while it

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in no way disqualifies another for his special occupation.

To illustrate:—The normal rotary movement of the arm with the shoulder joint as an axis, permits the hand to describe a complete circle on a plane parallel with the median plane of the body. At right angles with this plane the hand can describe but a half circle. Anything short of this range of motion is impairment of function and according to the occupation of the claimant either does or does not disqualify him for manual labor, in his own chosen employment.

A claimant's labor is most valuable in that occupation in which he is most proficient. Change in occupation because of a growing disability generally means diminished income.

A painter, a decorator or a plasterer who is disabled from performing overhead work because of rheumatism of the deltoid or other muscles of the shoulder joint, is disqualified for manual labor to a certain degree, although he can paint, decorate or plaster when arm movement does not range above the shoulder level.

This fact ought to be taken into consideration in the rating of claimants' disabilities, under such circumstances.

Again, stooping and lifting enter largely into occupation of masons, bricklayers, carpenters and other skilled laborers. If in these the lumbar muscles suffer from rheumatism the disqualification is almost complete for other lines of manual labor, as well.

Rheumatism of hip or knee or ankle almost wholly disqualifies a claimant for performing manual labor if the condition is such that continued daily effort aggravates and increases the disability. To the writer's mind there is no physical disability that is so prostrating as a joint affection of the lower extremities, manifesting by pain, soreness and weakness, its own inability to support the body while engaged in some laborious occupation. These are the cases where employment can be followed for but a few days each week and then only until the partial disability shall have increased to such an extent as to incapacitate the claimant for any occupation whatever requiring a standing posture.

Again, a crippled condition of a hand very seriously diminishes the earning powers of an individual. As a perfect

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piece of mechanism, the human hand excels all others. In its fine appointments and exact adaptation to such varied uses, its function at once is susceptible of a great degree of training. The nimbleness and dexterity of its action is best shown in the finger movements of the pianist or violinist. When chronic articular rheumatism or rheumatoid arthritis affects the fingers and hand of a claimant, it may not only impair freedom of action but it may also stiffen the tendons and joints sufficiently to diminish the power of grasp for the coarser occupations. The fingers, after a series of attacks, may become permanently semi-flexed with an inability to either completely open or close the fingers into palm of hand. The practical use of the hand under such circumstance is destroyed equal to its loss by amputation.

3. The Measure of Disabilities and Their Disqualifications for Manual Labor.

To estimate with any degree of accuracy the grade of disability produced by the sequelæ of rheumatism is a problem that can only be solved by comparison with some given standard.

The pension department has adopted the ability or disability of claimant to "follow manual labor" as the rule for guidance of examining boards.

A test then of muscular and joint function is necessary.

The power of grasp of hand, the normal movements of wrist, elbow and shoulder, such as extension, flexion and rotation must be noted.

The latter is best observed in describing the circle and half circle already mentioned—by placing hand on opposite shoulder, as in testing for dislocation, and by placing hand behind the back in an effort to touch the opposite scapula.

So, too, with joint action and muscular power of the lower extremities—the complete flexion of thigh upon body, of leg upon thigh, of foot upon leg and the corresponding extension of the same parts, must be definitely ascertained before any correct estimate can be determined.

All such movements should be passive at first on part of claimant and afterward forcible by pension surgeons themselves.

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By grasping the muscular mass it may be ascertained whether muscles are flabby and small or large and firm, thus noting atrophy and hypertrophy.

Tape-line measurements are more definite, however. These measurements should be taken at point of greatest girth of arm, forearm, thigh and leg.

Gait of claimant is a significant sign of either actual or exaggerated conditions.

In such painful and disabling affections of one or both lower extremities as rheumatism and sciatica the gait is of a limping character in order to reduce suffering to a minimum.

The degree of disability and sensitiveness of a joint or joints of the lower extremities and spinal column can be disclosed by instructing claimant to hop around the room, upon one foot.

Finally, in estimating and computing the aggregate permanent disability from rheumatoid affections, all the elements of disqualification, having been duly weighed, both by the examining boards and the government *it would appear but just* to *the claimant*, that in cases of a compulsory change of occupation whereby he suffers a continued financial loss, *this fact alone*—independent of all the other elements of disqualification—*should enter* as an *additional* factor into the total rating proportionate to such financial loss.

Discussion.

Dr. Baker, of Washington, D. C.:—In looking over the records of our examiners' book in the last one hundred cases I find that rheumatism is claimed in only sixty-eight per cent. Going back for another hundred cases I find the percentage is exactly the same. So that in this locality we do not have as much rheumatism as farther north.

The subject is often discussed in our board as to how much significance should be given to complaints of pain. A man claims to have lumbago violently. When you ask him to stoop over he cannot. Examine him for piles, and he stoops generally with great facility. According to our records we have found that not more than half of these claim-

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ants had structural changes sufficient to warrant a pensionable rating.

DR. BYERS, of Pennsylvania:—A very large percentage of the applicants coming before us claim to have rheumatism. Now changes of weather affect rheumatism greatly. One matter I should like to hear discussed is as to the rating for alleged rheumatism. In many cases at the time of examination we find no physical evidence of this disease, although I think there are many cases who do suffer from rheumatism and yet we are unable to find any physical evidence of the same. I should be pleased to hear some suggestions as to rating in this class of cases. Are we allowed to rate for alleged rheumatism where we find no physical evidence, or shall we turn all such cases down?

DR. GREENWOOD, of Massachusetts:—I understand that in carrying out the statute you cannot rate pensioners for anything but actual physical disabilities. The question was raised in one of the papers as to whether, under existing law, we can take into consideration a claimant's occupation in rating him for disability. For instance, a man is slightly disabled, who is in clerical occupation, and on account of that partial disability may lose his employment, although the disease may not disable him entirely for ordinary manual labor. He must be rated on his disability, not on his loss of employment. Under the law, as it is, I do not understand how we can take into consideration a man's own statement as to his having rheumatism every time the weather changes unless we find actual, physical disability. I believe the rule is never to give a rating unless actual physical disability appears in some way, either in the heart, joints, or other parts.

DR. WHITCOMB, of Pennsylvania:—The question of rating for rheumatism is a very troublesome one as between the government and the pensioner. I remember very distinctly, that about 1890, I was in attendance upon a soldier with acute articular rheumatism, with which he was in bed for some six months unable to do anything whatever. During the time he was bedridden he made application for a pension. After a short time he was ordered before the board, but he completely recovered from this attack of rheumatism and presented himself before the board, of which I was then

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the Treasurer. At that examination we were unable to find any structural changes whatever, and he received no rating. Dr. Ingram was Referee at that time and, as I learned, Dr. Ingram and myself received the odium of turning down the applicant, and he never forgave me up to the time of his death, because he did not receive a pension. Six months after this he was again laid up with rheumatism and employed another physician. At my suggestion his case was then referred to another board which gave him the full limit of his pension, and that pension he received until his death. After that second attack he was completely disabled from labor, and never recovered.

My father has suffered from rheumatism since his eighteenth year and at one time was so disabled as to be unable to move hand or foot for nearly a year, lying on his back with constant attendance. Yet, to-day, he is eighty-seven years old, and there are no structural changes whatever in his body. His joints are more supple than mine. There is no atrophy or hypertrophy of joints or muscles except that which comes with advancing years.

Claimants come to us suffering, as they say, with attacks of rheumatism. We examine them with the greatest care; at least, I do, and I have no doubt but that we all do, because of the great difficulty we have in finding changes, and knowing that so many apply on account of that disability. It seems to be a great stumbling block for the examiner to discover structural changes. I feel sometimes as though these claimants were very greatly exaggerating their conditions, and I have to trouble myself a good bit before deciding what is best to do. When it comes to writing the certificate, if you feel that the claimant is conscientious and honest, that he has not exaggerated, how are you going to write his certificate and send it to the Medical Referee so that the Referee can see that case exactly as you see it—so that the Referee will have a pen picture of the case so striking and plain that he can rate the case as you have rated it? I think this is the most important subject that this convention has to discuss, and I hope we shall get some enlightenment that will help us to do full justice between the government and the claimant.

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DR. MERRILL, of New York:—I doubt not many of you have seen cases which correspond with what is called railway spine after an accident on a railroad—cases where just as soon as they get damages they are well. In a great many of these cases of so-called rheumatism just as soon as the pension is obtained the rheumatism disappears. There is much difficulty in doing justice to those who give only subjective evidence of disease. Still, by the rulings of the department, I do not see how we can conscientiously give a certificate where we find no objective evidence.

DR. TWEEDLE, of Pennsylvania:—One of the questions I ask is, "What is your occupation?" He will tell you, "I used to be a locomotive engineer; at present I am a wiper in a roundhouse." The difference in salary for those two occupations is from $4 to $1.25. I think such a man to that extent disabled for manual labor. We also find old miners in our region who have been able to earn $6 a day; when I ask such a one his occupation he tells me he is a slate picker at present. Such a man has had his compensation reduced to $1 a day and is disabled to that extent. He now only gets the same compensation that a boy gets. I agree with the writer of the paper that that should be taken into consideration.

If we take the claimant's history into consideration, that will aid us to a great extent. Dr. Merrill referred to the man who complained of rheumatism but who got well as soon as he obtained his pension. Still, there are a great many cases where the occupation the claimant follows will be sure to disclose whether or not he is feigning, and that will aid us a great deal in making ratings.

THE PRESIDENT:—We have Dr. Ingram with us to-day. He was formerly Medical Referee and he may give us some experiences to help us out in this matter. [Applause.]

DR. INGRAM:—Mr. President, I am not certain that I shall enjoy talking at this time on this subject, because I have had some very unpleasant experiences in connection with it, experiences about which I could speak very feelingly.

I am a little disposed to criticise any suggestion that a soldier complaining of rheumatism is too often a malingerer. He has, no doubt, suffered much at times, with possibly better days between attacks, but he suffers more or less all the

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time. The weather affects him. In your consideration of rheumatism I hold that it is of the first importance that you should have some conception of its pathological nature, and I will accept the opportunity to discuss from personal experience what I believe to be the actual pathological nature of rheumatism.

When I was a student some thirty years ago, I was very near Professor Gross, and he frequently delivered his lectures with his hand upon my knee, so that I was to a degree familiar with him. Upon one occasion we were walking out after he had delivered a lecture, and he put his arm around me and said "My boy, what do you think of that for a discussion of the *intimate nature of inflammation*?" I was getting along toward the end of my third year at the time, and I ventured to suggest that he had delivered a fine lecture on inflammation (it was practically what he had said in his books), but that we pay too little attention to the physiological processes concerned. He said "Physiology—a bad word—I can teach all the physiology that is known in three lectures." Notwithstanding his belittlement of our knowledge of the subject, I still hold that we do not pay sufficient attention to the physiology concerned.

I look upon the nature of rheumatism as a grave disturbance of the physiological processes constituting waste and repair. In health our bodies are continually rebuilt as they are continually wasted. Physical and mental exercise break down the tissues. At a normal rate this is healthful. The tissues need to be exercised, they need to be changed. The tissue structures are broken down by physical and mental exercise. We take into our bodies nutritive material to repair these tissues. The processes of life are involved in this continuous breaking down and repair.

I look upon excessive fatigue as very often the beginning of an attack of rheumatism. You are familiar with many cases of acute rheumatism either of the joints or muscles, and they are practically the same, that have been brought about somewhat in this manner: It has occurred in a person unaccustomed to severe or excessive physical exercise, such as baseball or football, or in one who has made a long march causing excessive fatigue. This unusual exercise breaks

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down an enormous amount of tissue in the legs or the joints of the legs, or in other parts. This broken-down tissue means increased detritus which must be removed. If, in addition to this increased amount of broken-down tissue you have a chilling of the body, checking the circulation, the detritus remains to poison and further irritate the tissue cells. This, to my mind, is very often the beginning of rheumatism. You will call it fatigue. The earlier symptoms of rheumatism are nothing more nor less than those of fatigue. If the detritus is removed and repair is complete there is no rheumatism and you can simply say "I have been excessively tired." But, allow that fatigue to go on day after day, or add to its severity, and you have all the conditions which determine an attack of rheumatism. The fact is, that after this detritus remains a little while it becomes an irritant and arouses inflammatory action. If these broken-down elements are carried by the blood to other similar parts or structures, they irritate and produce inflammatory action in these tissues. So in this way rheumatism has a habit of travelling from one joint to another. In the first place, the rheumatism I have described has been located originally in a part most exercised and broken-down. You will find that the man who has made a long march will have rheumatism in the hips, the knees, or possibly in the ankles. If the fatigue is excessive and continued, in any special part or organ the rheumatism will originally be located there. It is caused by an excessive breaking down of tissue in a part and is aggravated when these tissues are chilled or are more or less congested. If exposure and chilling further interfere with the circulation and the consequent removal of the detritus, you have the most frequent factors causing rheumatism, and these are identical with the factors causing fatigue. In many patients I have observed, I really think I could put my finger upon or distinctly recognize in the above facts the direct cause or the start of a rheumatic attack. I do not deny, however, that there are other causes which greatly predispose to rheumatism, but I am convinced that it is most often aroused by the same causes as those which determine excessive fatigue.

Something has been said, and very properly, concerning the question of pain in rheumatism, and that there are no

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readily recognizable pathological disturbances by which you examining surgeons may distinguish that the man is actually suffering from pain. The man shows that he is stiff and weakened, and he also complains of pain. We must have some conception of what pain is, before we can discuss it intelligently. I look upon pain as simply an evidence of injured or weakened tissues. It is simply the complaining of injured or weakened tissues. It may exist in all degrees, from a general tired feeling to all the variations from dull and heavy to the acute pain of a severe injury. This may be a comprehensive answer without much explanation of what it really means, but it satisfies me that the tissues have been injured; and because of some persistent injury they are now complaining. Pain may be of all degrees, from a simple tired feeling to the acute pain of lacerated tissues. Pain in a rheumatic subject, I can assure you, may be aggravated by certain conditions of the weather. It may be within the experience of men here that rheumatic ailments are often aggravated by a southeast wind. I do not know why, but I am most sensitive to a southeast wind. I speak feelingly on this subject because I know what it means. When a southeast wind comes up I feel a burning sensation in the palms of my hands, a sensation of shooting pains under the ligaments of my wrists and extending into my body. I know the changes of weather affect me.

If I have given you a fair definition of pain—that it is the complainings of injured tissues—then I believe you can sympathize with a soldier who says his pain is affected by the weather. There seems to be an increase in the power or influence of the irritant, or else a weakened resistance in the tissues due to certain changes in the weather, which makes the old rheumatic somewhat of a barometer.

My theoretical conclusions as to the pathological nature of rheumatism are to my mind very fully sustained by the rational measures I find most successful in the management or treatment of this disease. I have always believed that rheumatism is the result of a defective removal of the waste or detritus from broken-down tissues. Let the fatigued man take a warm bath and manipulate his muscles and joints, not allowing the circulation to become slowed or obstructed,

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and he will probably escape an attack of rheumatism. But if he allows himself to rest, after fatigue, in a cool place, with a draft, so that he gets chilled, practically stopping local circulation of the blood, rheumatism sets in.

From these speculations I have arrived at the conclusion that rheumatism is not due to any particular germ, but to a physiological disturbance in the processes of waste and repair, and that our first concern in its successful management should be to look after the elimination of the detritus as the most important matter, and then see that healthful reparative action goes on.

A MEMBER:—May I ask the Doctor a question?

DR. INGRAM:—Certainly.

A MEMBER:—Why does rheumatism affect the joints of your hands and apparently no other joints?

DR. INGRAM:—It is a mistake to suppose that in my own case the hands alone were affected. The rheumatism in my case, was largely in the back, between the shoulders, and involved the muscles of the arms. As I lay in bed suffering I could not rest in any position except on my back. My arms seemed to, and did waste away, and I still cannot raise my arms with satisfaction. There was simply a waste in the extensor muscles of the arms and forearms with persistent contractions of the flexor muscles and palmar fascia. The disease was not in my hands particularly, although they were badly swollen. Although rheumatism of great severity may leave but few coarse or easily recognizable pathological changes, the weakened reparative power in the muscular and fibrous structures is often of the gravest significance. Weakness of muscular power and a proneness to be easily fatigued should enter into your estimate of the degree of existing rheumatism.

Continuing, if you will permit me, I will now lay down the primary proposition that rheumatism should be gotten rid of by elimination. I have become enthusiastic upon the subject of eliminating by promoting the circulation of the blood. The application of heat is also very important. Heat favors and increases the onward circulation, and consequently hot baths are one of the standard cures. I spent some time at

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the Army and Navy Hospital at Hot Springs, Arkansas, and they certainly did roast and boil a good deal out of me.

The next most important thing I found was manipulation of the tissues, as in the various forms of massage. I have a coarse brush at home which I regard as my savior. The application of a coarse brush with plenty of muscle behind it is a very important aid in the management of rheumatism.

Another thing you have always believed, is that it is necessary to keep an inflamed joint quiet. You will not believe it until you realize it from practical or personal experience that an inflamed knee joint or other inflamed part will respond to treatment by manipulations—not directly of the joint itself, to begin with, but at first of the tissues between the joint and the body, and then of the joint itself. What the joint wants is not rest so much as to get the circulation of the blood through it. It is the removal of waste and the bringing of new blood that brings new vitality, and repairs the injured and painful or complaining tissues. You cannot remove the waste and secure repair without a free circulation through the parts, and warmth and manipulations are the greatest aids to the onward flow of the blood.

I have, perhaps, occupied a good deal of your time, not in the direct line of your thoughts as to the best means of recognizing the obscure evidences of existing rheumatism, but I hold that it is of primary importance to know its nature, and I have simply desired to impress upon you the fact that rheumatism is a grave disturbance in the ordinary physiological processes of waste and repair; that a defective elimination of waste from the tissue structures obstructs repair; that by its irritating presence it may set up inflammatory action and may to a greater or less degree permanently weaken the vitality of the tissue elements, as in chronic rheumatism; and that pain of varying degrees in intensity is the complaining of weakened, or of more severely injured tissues. [Applause.]

Dr. Strickland, of Pennsylvania:—I do not think there is any one who will doubt the reality of rheumatism either in the young or the old. As to cause and treatment they are not proper questions before this body. The question to discuss here is ratable disability for rheumatism. A subject

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presents himself in a crippled condition. He may come in on crutches, with a cane, or be brought in by a friend.

There is a motive back of all this. It is well to take into consideration that he has a motive for his condition claimed, or perhaps, existing. The law lays down the fact that you must find some pathological evidence of disease, some objective symptom; otherwise you must not rate. You are censured and ridiculed for certifying a rating for rheumatism when you have not found any objective symptoms, any pathological conditions or any structural change. The treatment of rheumatism is a very interesting subject, but that is a question for discussion elsewhere. We are simply here to discuss the question as to how we shall rate these men, for disabilities claimed or existing. We cannot find pain. The man may be suffering pain at the time he is in your presence, but you cannot say whether he is or is not, that is, if you cannot find any waste of tissue, if the joints are free, if there is no heart affection or any other trouble that might arise from rheumatism. Your sympathies are with the soldier, you may want to rate him, and you believe his condition justifies a rating. But, as I have said before, if you rate him without finding any pathological evidence of disease your certificate is simply ignored, and you are advised not to rate unless you find conditions showing disability.

Dr. T. Franklin Smith, of New York:—Mr. President, we have come to this conclusion in our board, in regard to rheumatism, and especially lumbago: We never ask a claimant to stoop over and pick up things from the floor. We have got beyond that. When we did that some years ago we found that there was a great deal of difficulty in picking up things from the floor. So we have done away with that sort of examination, and we always take it for granted that the man has hemorrhoids. Give him an opportunity to show whether he has or not, and then you will see whether stooping is interfered with or not. If you ask him to pick up something from the floor, of course he will do it with difficulty, but if you ask him whether he has hemorrhoids you have to examine him to see whether he has or not; so we make him expose himself and examine him for them; and in

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a majority of cases there will be no difficulty in his stooping.

Then, there is another thing that it seems to me is to be considered. The law says that a man, in order to receive a pension, must be disabled or incapacitated for doing manual labor. A man comes before us claiming rheumatism; he states that he is an iron moulder, carpenter, or some sort of mechanic. He oftentimes states that he is laid up for weeks at a time because of that pain. There is no pathological injury that we can find, no stiffness of the joints, no trouble with the tendons. He may have pain, but there is one thing evident, that he does not have sufficient pain to keep him from doing manual labor when his hands are just as hard as rocks. We always lay great stress upon the condition of a man's hands; if they are rough and horny we set it down that that man is not incapacitated for manual labor on account of rheumatism.

Dr. Eisenberg, of Pennsylvania (in concluding):—Mr. President, I do not desire to prolong this discussion and thereby lessen the time for the consideration of many admirable papers. I desire to thank most cordially the Association for the very kind reception the paper has had and for the expression of the different thoughts upon rheumatism by members who have taken the floor for that purpose. I knew very well that there would be some comments made that would not be entirely in harmony with the paper itself.

I knew, especially when I spoke of pain as a solitary symptom of rheumatism that there would be some who would disagree with me. But it so happens that I suffer much pain myself in one joint from a former rheumatic attack, wherein you will find nothing whatever of an anatomical character to corroborate the pain and sense of weakness, —the latter being so great that on some occasions when stepping out of my carriage I am precipitated to the pavement. It must be that patients will come before you suffering from pains which you cannot diagnose from their statements. I sometimes have no pain and no weakness in my left knee, and yet I could not walk two squares of uneven surfaces without getting sore and becoming disabled. One doctor has struck the nail on the head when he said that a physician, to know rheumatism, should have it himself. I am

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as weak in my knee sometimes as an infant, and yet you cannot tell it by any objective sign except crepitus. Crepitus alone I do not regard as an evidence of rheumatism, and yet that is the only evidence in my case. Still, I am so weak sometimes that when I get out of the carriage on my left foot I go down to the pavement. There must be applicants coming before pension boards who are similarly situated, and whose applications are discarded for want of proof.

It seems to me that boards ought in a measure to accept the statements made by the applicant, unless the pension surgeons are satisfied that he is not telling the truth. No other course is fair to the applicant.

A gentleman on the other side of the hall spoke about the evidence of the horny hand. What he said is correct in a measure, but it must be remembered that there are many horny hands that work in pain. I know it is not always possible to discriminate, but you must accept some of the statements made by applicants. In my own observation of the last twenty years there have been many cases where I had to accept the statement as to pain being the only disqualifying factor. I thank you again for the very kind reception of my paper. [Applause.]

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Chronic Malaria,

Complications and Sequelæ with Reference to Digestive Complications.*

BY

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HISTORICAL.

HISTORICAL records of the human race give the undoubted evidence that malaria is one of the oldest enemies of humanity. During the migrations and wars of antique nations the poisonous emanations of swamps are described as having claimed countless victims. Unmistakable descriptions of some forms of malaria are found in the writings of Protagoras, 500 B. C. The disease was well-known to later Greek and Roman physicians (Celsus and Archigenes). It is probable that the drainage and sewage system recently discovered among the hills of Rome, and to which a great antiquity is ascribed, was constructed with the conscious purpose of ridding the soil of the cause of endemic malarial fever. In Arabic medicine the various forms of malaria and their causative relationship are well known.

Agriculture and malaria are two factors which mutually control each other in the early history of the human race. Where there was no culture of the ground malaria was exuberant, and the disease declined as soon as the ground was cultivated. There is no distinct reference to malaria in the papyrus of Ebers, but according to W. Groff, malaria was well known to the ancient Egyptians. The word "Aat," which occurs in the inscriptions on the temple of Denderah, refers to the annual recurrence of chills and fever. The entire history of our knowledge of malaria can be divided into

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three epochs: (1) The antique history, descending to the time of the discovery of the specific virtues of cinchona bark. (2) The period between this discovery (about 1640) and the discovery of the malaria parasite by Laveran (1880). (3) The development of malarial hygiene, prophylaxis and parasitology since 1880. The most important and far-reaching of these events was the introduction of cinchona and quinine into the therapeutics of malaria.

When the Spaniards under Pissaro conquered Peru, they became acquainted with this remedy from the "Tree of Health" which had been known to the natives from time immemorial. The Viceroy, del Cinchon, whose wife was cured by this remedy, gave to it the name of cinchona, but the real credit of having introduced the remedy into Europe is due to the physician of this prince, whose name was Juan del Vego. In England Sydenham was largely instrumental in disseminating knowledge concerning cinchona and it was he who first emphasized that the remedy must be given in the interval, between the attacks, in order to prevent the following attack. In recent time much has been done to make malarial regions healthy by drainage, laying dry of swamps, and improving the condition of the soil, and special efforts directed towards the destruction of mosquitoes.

Referring once more to the first period, it is necessary to state that Hypocrates had described fevers "without demonstrable localization" in the section on the "Nature of Man," chapter XVI. He says "There are four kinds of fever, in addition to those which occur with distinct pains. Their names are synochic fever, daily fever, tertian fever, and quartan fever." In his aphorisms, 21 and 22, he even emphasizes that certain characteristic fevers are distributed upon certain times of the year. In chapter VII. he refers to the infectiousness of water coming from swamps. "Whoever drinks it," he says, "must have, during the entire time, a large, consistent spleen." Bellos, of Athens, confirms a complete identity between the fevers described by Hypocrates and those which are found at the present day in Greece.

After the discovery of the malarial parasite by Laveran, in Nov., 1880, his results have been confirmed in every country

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of the world where malaria is known. The names of Golgi, Marchiafava, Celli, Grassi, Feletti, Bignami, Bastianelli, Romanowsky, Di Mattei, are intimately associated with the development of the etiology and parasitology of malaria. Most valuable contributions to this subject in America have been made by the author's teacher, Wm. T. Councilman, Professor of Pathology at Harvard University (with whom the author worked on malaria, in 1884, at Bay View Hospital, Baltimore), Osler, Thayer, Hewetson, Craig, and James Ewing.

Chronic Malaria.

By chronic malaria we understand an infection of the organism with malaria parasites, extending through months and years. After Ross, under the direction of Manson, had shown that certain infections in birds, due to sporozoa, are caused by the sting of mosquitoes, Grassi established the fact that the malarial parasite of man is also acquired by the sting of mosquitoes. It is at present believed that the mosquitoes have infected themselves by previously stinging human beings afflicted with malaria, and sucking in their blood. There is no other source of infection. The mosquitoes that transmit this infection belong to the genus "Anapheles," and they infect man with the youngest developmental stage of the malarial parasite. In the following account I will not use a specific name for this organism, for there is as yet no agreement concerning the terminology. Romberg (Mehring's Lehrbuch der Medicin) speaks of "sporozoids;" Laveran and a great many of his followers use the term "plasmodium;" Welch, the term "hæmatozoon falciparum," etc., etc. There are many other names which are listed in Mannaberg's work on Malaria, Nothnagel's Spec. Pathologia and Therapie, Bd. 11, p. 55. I shall prefer to speak of the organism here simply as the "malarial parasite." There is no doubt at the present time that this organism is the specific cause of malaria, and that it is acquired by the sting of the mosquito. It is not yet decided among special workers whether there are several species of this same parasite. The best workers, however, consider that the phenomena of the disease are more easily reconciled with the existence of a single poly-

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morphous species (see James Ewing, "Malarial Parasitology," Journ. Exper. Medicine, Vol. V, p. 452). Mannaberg, (l. c.) accepts the view of Celli, Bignami, and Marchiafava, in respect to the separate nature of the malignant tertian and a quotidian group of parasites. Chas. F. Craig ("The Estivo-Autumnal Malarial Fevers") also divides the parasites producing these fevers into quotidian and tertian. W. S. Thayer, in a recent personal communication to the writer, expresses the belief that the estivo-autumnal fevers are all due to one and the same parasite.

In a practical consideration of chronic malaria a detailed consideration of the parasitology of the disease is out of place. By chronic malaria I do not understand, necessarily, that the continuance of the infection is due to frequent re-infection, but to the stubborn persistence of the parasites which have once entered. If careful statistics of all malarial diseases as they occur in hospitals and camps could be established, I believe that we would discover that the majority of malarial infections have a chronic character; for among the acute malarias we can only class such cases as are finally and radically cured after few attacks, whereas those cases which are characterized by four or more relapses are in the majority. Such cases may extend over six or eight weeks, and still they are acute. In order to designate a special case as chronic, it will have to extend over several months. Without the use of quinine, the majority of malarial infections would inevitably become chronic. If we accept, for the sake of argument, the classification of Mannaberg, (l. c.) of malarial fevers into two groups:—Group 1, fevers caused by the ordinary malarial parasite (the tertian and quartan parasite of Golgi) without the occurrence of half-moons; and Group 2, fevers caused by the parasites forming the half-moons (he has also a third group due to mixed infections, and a fourth group which he entitles "masked fever")—we may say that the malarial infections of the first group rarely become chronic if they receive proper treatment. The principal contingent of the chronic malaria is supplied from the infections with the second group (those with half-moons or crescents in the blood). Although it is as a rule possible to radically cure malarial infections by the correct use

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of quinine, a complete eradication of the parasites from the organism is frequently impossible. Quinine therapy and hygiene and diet can accomplish practically nothing in this guerilla warfare, *when the parasite is entrenched in the tissues of the parenchymatous organs. It is only when the enemy leads his hordes into the free circulation that quinine can overwhelm them.* Consequently we find that chronic malaria is much more frequent in those countries where the parasites of the second group predominate, and not so frequent where only the parasites of the first group cause the infection. The parasites of the second group, presenting the crescents or half-moon shapes, cause the most frequent infections during the summer and autumn. These are the estivo-autumnal fevers, and they are most likely to become chronic.

The characteristics of chronic malaria from a clinical standpoint, are the following: (1) During many months recurrences of malaria from time to time. These may be typical or masked attacks of chills and fever. (2) Anemia. (3) Splenic tumor, eventually together with liver enlargement. (4) The same species of malaria parasite is demonstrable in the blood during the entire time. (5) Decline of the general constitution. Concerning the nature of the relapses, it is necessary to emphasize that the patients are frequently not aware of having fever, nor have they a chill, as a rule. Indeed it frequently happens that patients with chronic malaria, even when they have fever, suffer very slight subjective distress. I have seen malarial patients with the crescents in their blood, splenic tumor and cachexia, who denied ever having had fever. It pays to take frequent measurements of the temperature of such patients before crediting their statement of the absence of fever. It is the chronic form of malaria which is most frequently latent, and which most frequently leads to pernicious malaria. To those who have occasion to see soldiers returning from Cuba, Porto Rico or the Philippine Islands, the following clinical picture is a familiar one: The soldier enters a hospital, the diagnosis occasionally being that of masked typhoid fever. He has a slight splenic tumor, is anemic, pale, weak and nervous. In about ten days he seems convalescent, and is directed to leave the hospital. Just about this time he is attacked by

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violent fever, which is repeated every third day, until treatment succeeds in suppressing it by quinine. The patient again becomes anemic and the splenic tumor enlarges. Once more the patient seemingly improves, though it takes longer this time than it did after his first admission to the hospital. Convalescence will not progress very far, however, before he has a second relapse. This may repeat itself and continue with alternate improvement and exascerbations for many months. Such soldiers who were admitted in July or August will be found with periodic attacks of fever still in the hospital during the following spring. It may happen that the soldier at this time is discharged, and returning to his home gradually appears to improve, but still showing the evidences of malaria. Cases are on record where such patients have suddenly collapsed at their homes in a comatose condition. As the physician who is then called in knows nothing of the preceding history, the case presents diagnostic difficulties. It has happened that such patients may die in these comatose attacks, and only the autopsy reveals the true nature of the chronic malaria infection. On the other hand, cases of complete recovery after such comatose attacks are on record, and the patient may remain well for the rest of his life.

I am requested to speak also on the complications and sequelae of malaria. What is a complication and what is a sequela? (a) A complication is a diseased condition co-existent with and modifying another, with which it may or may not be etiologically connected. (b) A sequela is a consequence of an abnormal condition—any abnormal state following an attack of disease or injury. The difference between the two is considerable. A complication is co-existent with malaria, and a sequela follows it. For instance, splenic tumor and anemia are as a rule complications, but hypertrophy of the heart is as a rule a sequela and not a complication. In text-books on malaria you will meet with the most striking confusions of these two terms. Malarial cachexia is also a sequela and not a complication.

The complications involve the following organs in the order stated, with greatest frequency: (1) a. Complications of the digestive tract; b. genito-urinary system—these two

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systems are involved with equal frequency; (2) of the heart and blood vascular system; (3) of the respiratory system; (4) nervous system; (5) diseases of the bones, muscles and joints; (6) diseases of the skin; (7) diseases of the lymphatic system; (8) diseases of the organs of special sense; (9) diseases of metabolism—notable among these are diabetes and amyloid degeneration.

You will notice in this tabulation that I have not mentioned the diseases of the blood itself, which no doubt should be mentioned first, if we wish to consider it a complication. But malaria itself is from the very beginning a disease of the blood, and we can hardly designate as a complication what really constitutes the disease itself. Occasionally it is difficult to hold apart the complications and the sequelae. Some of the conditions stated may be complications and sequelae at the same time. It is doubtful whether diabetes mellitus or insipidus deserve the place of genuine complications of malaria. I have a record of 198 analyses of urine of malaria patients gathered from hospitals, and found only two cases with diabetes mellitus. The coincidence of the two diseases can hardly be considered more than accidental. The same can be said of amyloid degeneration. For our special point of study, only the most frequent complications are of importance, those of the digestive organs, the respiratory organs, circulatory and renal organs. The conditions of the blood can appropriately be considered under the heading of malarial cachexia.

Complications of Digestive Tract.

The complication of malaria with typhoid fever can only be substantiated by the demonstration of the simultaneous presence of the typhoid bacillus and the malaria parasite in the same individual. The co-existence of the two infections is reported by Barker and Thayer, and published in the works by Osler and Gilman Thompson. It was J. J. Woodward in his Medical and Surgical History of the War of the Rebellion, who first used the term "typho-malarial fever," by which he conceived a third or hybrid form of fever not identical with malaria or typhoid. Smart, who worked over the material of J. J. Woodward, found that actually 80 per cent.

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of the cases classed as typho-malaria were nothing else than malarial remittent. With our present clinical methods which establish beyond a doubt the existence or non-existence of malaria by blood examination and the Widal reaction, there should be no confusion on these points. It was occasionally noticed that an intermittent fever followed in the course of the continuous fever of typhoid—that this intermittent fever was even preceded by chill and ended in sweating. This gave rise to the belief in the union of typhoid fever and malaria. At present we know that these fevers are typhoidal or sequelae to typhoid fever, and that malaria has nothing to do with them.

Association of Dysentery with Malarial Fever.

Numerous of our soldiers, returning from tropical countries are found suffering both from dysentery and malaria. About 15 years ago a vehement polemic filled the journals as to whether malaria 'per se' could cause genuine dysentery. It is now known that in this association we have to do with two distinct infections. One with malarial parasite, and the other either with the amœba coli, or one of the forms of the bacillus dysentericus. It is self-evident that if a patient is already afflicted by one of the types of dysentery a very slight attack of estivo-autumnal malarial fever may prove pernicious to him. The thing to do in those cases is promptly to ascertain the nature of the dysentery and remove it by high colon irrigations of tannin and quinine, and at the same time to get a clear insight into the nature of the malarial infection by thorough examination of the blood, and treat it by quinine, *hypodermically* if necessary. For if the patient is simultaneously afflicted by an acute intestinal infection like dysentery, it has been my experience that they frequently reject the quinine if given by the stomach, and in some cases even where it was retained it did not act as it should have done, because of the deranged gastric chemistry, intestinal putrefaction, diminished gastro-intestinal absorption and rapid propulsion of the drug through the gastro-intestinal tract. In fact I no longer wait until the stomach rebels, but start from the beginning by giving one grain of quinia hydrobromate hypodermically four times a day. In case of soldiers

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returning from the Philippine Islands, as observed at the U. S. General Hospital of San Francisco, 65 per cent. showing the estivo-autumnal parasites in the blood were also suffering from acute and chronic dysentery. Of these about ten per cent. were suffering from amœbic dysentery, as evidenced by the presence of amœba coli in the stool. It is necessary to emphasize that the blood of every case of dysentery coming from malarial and tropical regions (we are specially interested in Philippine Islands, Porto Rico and Cuba), should be examined for the malarial parasite, and the stools for the presence of the amœba coli or one of the varieties of the bacillus dysentericus of Shiga and Flexner. It is not stated in the report of the above U. S. General Hospital in how many cases the dysentery was found to be due to the bacillus dysentericus. In this connection it is necessary to call attention to the fact that dysentery may occur as a complication of malaria, and yet not be due to the amœba coli, nor even to the bacillus dysentericus, but to actual destruction of the mucosa by the malarial parasites. That gastric ulcers may be due to malaria has been pointed out by the author years ago (See Hemmeter "Diseases of the Stomach," 3rd edition, p. 386, "Malaria Complicating Gastric Diseases"; also report of a case of periodic hæmatemesis occurring every third day). Marchiafava and Bignami (XXth Century Practice of Medicine, Vol. XIX, p. 386) assert that gastric ulcers are found which are due to the malarial condition, in malarial cachexia and amyloid degeneration. Naturally if the malarial parasite can destroy gastric tissue in this way, it can have the same effect on the structure of the colon. These Italian authors assert that in cases of chronic malaria with frequent relapses there are sanguineous diarrheas, "*which may persist after the malarial attack, and finally present the clinical form of ulcerative enteritis.*" I have dwelt upon the association of typhoid fever, diarrheas and dysentery with malaria, not because these are the most frequent complications, as proven by statistics, but because, excepting the case of typhoid fever, they are the most frequent complications, as presented in our soldiers returning from Cuba and the Philippines.

It is practically impossible to recognize malaria without having acquired the skill in examining the blood for the

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malaria parasite. It does not require, however, much training to be able to recognize the more significant forms of the malarial organism. For the methods of examination the author refers to the article by W. H. Welch and Wm. S. Thayer in the Loomis-Thompson System of Medicine, to the valuable monograph of W. S. Thayer on this subject, entitled "Lectures on Malarial Fevers." See also Thayer and Hewetson "The Malarial Fevers of Baltimore," Johns Hopkins Press, 1895, also the work of Geo. M. Sternberg on Bacteriology, the article by James Ewing, "Malarial Parasitology" (Journ. of Experimental Medicine, Vol. V), and the scholarly contribution to this subject by Marchiafava and Bignami in the "XXth Century Practice of Medicine." I shall come back to this in the paragraph on the Diagnosis of Chronic Malaria, but this much I must emphasize right here, that in addition to the ability to recognize the malaria parasite, the physician must also be able to recognize the various micro-organisms that might cause dysentery, especially the bacillus dysentericus and the amœba coli. In order to be able to distinguish typhoid fever, the execution of the Widal test is indispensable. It may not be absolutely necessary for a pension surgeon to be able to execute all of these tests personally, but he should be at least able to recognize the malarial parasite itself—the Widal test and the cultures for the bacillus dysentericus may be left for the trained bacteriologist. But to show what dangers may arise from inability to recognize the malarial parasite, the following is quoted from the work of Chas. F. Craig "Estivo-Autumnal Malarial Fevers." At Chicamauga Park, where his first work was done, hundreds of cases of typhoid fever, pure and simple, were diagnosed as remittent malarial fever, and treated as such; this being due very largely to the belief that the camp must necessarily become infected by malaria, because it was located in the South. As a matter of fact, there was but very little malaria present among the troops at Chicamauga Park, as was amply shown by the investigations of Vaughn, Dock, Reed, Shakspeare and others. The colossal mistake of diagnosing hundreds of cases of typhoid fever as malaria was really responsible for causing the terrible epidemic which caused the evacuation of the

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park as a camping site, and Craig has attributed this mistake to ignorance of the nature and methods of diagnosing the remittent malarial fevers. Even at the risk of becoming redundant, I cannot suppress the desire of again emphasizing the infinite importance of blood examinations by the physician himself. I have very frequently noticed that physicians who did not have the training, confidence in themselves, or desire to do microscopic work, became intensely interested in blood examinations when they were instructed by capable teachers.

Complications Involving the Spleen and Liver.

In cases which have suffered from chronic malaria a condition known as hypertrophic malarial hepatitis, in which the organ is sometimes enormously enlarged, the spleen similarly becomes enlarged, and the simultaneous enlargement of these two organs constitutes an almost constant symptom of chronic malaria infection. In old chronic malaria patients the spleen may become so enormous, that it may occupy the larger part of the left half of the abdomen. There may be peri-splenic and peri-hepatic inflammations eventuating in fibrous adhesions. These changes in the liver and spleen have recently acquired additional significance in the etiology of a complication first described by Banti as "splenomagalie with liver cirrhosis, and disorganization of the blood." It has been pointed out by several authors that chronic malarial infection of the spleen may give the first incentive to the formation of poisonous substances in the spleen which may cause the cirrhosis of the liver and also the disorganization of the blood. The point to bear in mind is that Banti has clearly demonstrated that there are primary diseases of the spleen which, in a very peculiar way, may lead to toxic infection of the entire organism.

Splenomagalie with Liver Cirrhosis and Disorganization of the Blood—Banti's Disease.

Although not all cases of this complication which are on record have been attributed to chronic malaria, I consider it necessary to include this complication here because in two cases which I observed it occurred in individuals who had been in malarial countries, one of them a soldier who

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had served in the Cuban campaign, and had an unmistakable history of chronic malarial infection. In Osler's report on "Anemia Splenica" (Transactions of Assn. of Amer. Physicians, 1902) he gives a record of 15 cases that have been carefully studied. In five of these, that is, one-third of the cases, there was a history of malaria. The term "Anemia Splenica" was originally used by Griesinger, after it was discovered that leukemia need not necessarily be associated with a large spleen. Banti (La Sperimentale, 1894; also "Splenomegalie mit Lebercirrhose," Ziegler's Beitrage, Bd. 24, Heft I) described a splenomagalie with cirrhosis of the liver occurring in young individuals, and in the etiology he excluded malaria, syphilis, alcohol and other intoxications, and seemed inclined to admit only digestive disturbances as predisposing factors. The condition begins with a primary swelling of the spleen, which is followed by anemia and cachexia, and a chronic inflammation of the liver tissue, which in its final stages may present the clinical and pathological characteristics of Laennec's cirrhosis. The blood of these patients shows marked diminution of the red cells, moderate poikilocytosis, no leucocytosis during the course of the disease. Hemorrhages may occur especially from the gastro-intestinal tract, œdema, dyspnœa, in some cases ascites and icterus. In the beginning the urine is normal, and later on shows urobilin and bilirubin.

Banti's Disease.

The anatomical basis of this disease is a trabecular and follicular hyperplasia of the spleen (in later stages an extensive fibrinous transformation of the splenic pulp develops). The splenic vein (lienal) showed atheromatous changes in one of my cases—an individual 22 years old; in the liver, inflammatory foci were evident in the parenchyma around the portal vein extending into the interlobular spaces—eventually this presents the typical picture of portal cirrhosis. The prognosis is grave, and the disease terminates fatally in five to six months, unless an extirpation of the spleen is successful.

Banti conceives this complex to be a direct intoxication which is caused by toxines originally formed in the diseased spleen, and are first of all conducted to the liver with the

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portal blood, there acting as local inflammatory irritants, and furthermore as destructive of the protoplasm of the blood cells.

The direct proof of the validity of this view is furnished by a report of complete cures that have occurred after the extirpation of the spleen (splenectomy). These recoveries followed even in such cases where signs of cirrhotic contraction of the liver were evident at the operation. These statements of Banti have in principle been confirmed by other investigators especially the conception that it is a primary disease of the spleen (see Bonardi, Cavazzani, Tenile, Rinaldi, Maragliano, Benevuti, Sciola, Sippy,—who partly report clinical and partly operative cases).

A number of investigations have been made with a view to determining whether bacteria are active in the production of the primary splenic infection, but neither in the juice of the spleen or in the blood could bacteria be demonstrated. Senator, Sippy, Sciola (Amer. Journ. Med. Sci., Oct., 1899) have conducted investigations in this direction. Their negative results indicate that the exact nature of this disease is unknown. It is probably not an infective disease, but rather a chronic intoxication caused by an unknown poison. Harris and Herzog (Annals of Surg., July, 1901) suggest that a chronic hemolysis is produced by an enzyme manufactured by the endothelial cells of the spleen. Banti seemed to favor the view that disturbances in the digestive tract were predisposing factors. As one third of Oslers cases, and both of my cases had a distinct history of malaria, this would impress the necessity of going over the entire reports of cases of this kind to determine whether malaria is really not more than an occasional cause. Of course there are cases, like that of Dr. A. D. Atkinson (see Osler, l. c.) in which there was no history of malaria, and as a blood examination was made in most all of the cases, it is not probable that the malaria parasite would have escaped detection had it been present. On the other hand we must not overlook the fact that chronic malarias of long standing antecedents may have produced decided detrimental effects upon the splenic tissues, and the parasite have been eradicated by quinine treatment. This was the status in one of my cases, a

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youth, 27 years old, who had a history of chills and fever in April and May, 1900. The malarial parasite was then found in the blood, in Richmond. But when I examined him in March, 1903, no malaria parasite could be detected either by myself or by two other competent clinicians. So that the important point about the factor of chronic malaria in Banti's disease is a scrutinizing inquiry into the previous history of the patient. From a number of the publications on the subject, it is evident that the cirrhosis of the liver is not necessarily pronounced in all cases, and consequently ascites is not always one of the phenomena. It may occur, however, in the absence of evidences of liver cirrhosis, as a result of the passive congestion caused by the splenic swelling, or as a result of the anemic state of the blood. According to Senator the ascites may be due to obstructions of the lymph channels by simultaneous swelling of the mesenteric glands. Gilbert and Fournier (La Sen. Med. 1898, p. 141) in discussing the relation of the swelling of the spleen to the inflammation of the liver suggests that both organs may be simultaneously infected by the same toxine only that the liver infection develops slower than that of the spleen. The most characteristic symptoms are those referring to hemorrhagic diathesis. Osler, as well as Senator, has emphasized that gastro-intestinal hemorrhages are very frequently observed, but hemorrhages from the mouth and nose, and urinary tract are also frequent, and Osler has observed cutaneous melanosis, similar to that occurring in pseudo-leukemia.

From the cases compiled by Sippy, (l. c.) and Osler (l. c.) (First paper in Amer. Journ. Med. Sciences, Jan., 1900) I think the conclusion is justifiable that the results of the blood examinations are quite uniform. Stating it in a general way, these may be stated as follows: Moderate or severe anemia with reduction of the number of red corpuscles; a further reduction of the amount of hemoglobin (out of proportion to the reduction of the erythrocytes); small number of leucocytes (leukopenia); sometimes normal relations between the different forms of blood cells; at other times moderate presence of lymphocytes.

Banti's conception of this complex of symptoms for which Osler prefers the name of "Anemia Splenica," really

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stamps this as a pseudo-leukemic disease, a chronic infection of the general organism, originating in the glandular swelling—with this difference between pseudo-leukemia and Banti's complex:—In pseudo-leukemia we have a progressive involvment of new groups of glands, but in Banti's disease we have an imflammation of the liver tissue. The general intoxication in both diseases is expressed in the cachexia, anemia, œdemas, hemorrhages. It is especially interesting to be able to demonstrate that the formation of the infective toxines occurs primarily in the spleen because in 19 cases of extirpation of the spleen collected by Harris and Herzog (Annals of Surgery, July, 1901) recovery followed in 14; and in one the result was not given. In cases IV and V of Osler's compilation the spleen was removed by Dr. Harvey L. Cushing. Case IV was reported well, four years after the operation (information from a private conversation with Dr. Cushing); case V died of an œsophageal varix. According to Osler and Cushing, all cachectic symptoms disappeared after removal of the spleen, and Bessel-Hagen (Deutsch. Archiv. f. Klin. Chirurgie, 1900, Heft I), Maragliano and Terrile emphasized that the spleen should be removed as soon as the nature of the disease is known, and clinicians should by no means wait until an irreparable general condition and a severe cirrhosis have been produced. If a comparison to pseudo-leukemia is permissible, we might suggest that all suspicious lymph gland tumors should also be removed as soon as the pseudo-leukemia is recognized. As a result we might also comment on the influence of the removal of the spleen on the cells of the blood. Numerous careful observations by various competent authors have failed to demonstrate that splenectomy has any influence whatever in producing changes in the red or colorless blood corpuscles. This is in agreement with the views of Ehrlich and Lazarus, who attribute no active influence to the spleen in the production of the normal blood cells. It is of further interest to note the diametrically opposite effect that splenectomy has had on the condition of the blood known as leukemia, where the result was extremely unfavorable or fatal. This demonstrates a fundamental difference between the pseudo-leukemic and spleen disease, and those depending on a leukemic

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basis. In the former, including Banti's disease, the gland and spleen changes are the primary element in the disease process, whereas they are only secondary complications of diseases of the bone marrow in leukemia.

Diseases of the Nervous System.

Coincident with the estivo-autumnal fevers there may occur attacks of acute mania, and such cases have been described by Yanarris (La Med. Orient, 1898, II., 6), but this complication is very rare. Hysteria is not a very uncommon complication in nervous women and even in men, and, as in hysterical attacks in general, the symptoms complained of, vary greatly in character and severity. Paraplegia and hemiplegia may rarely complicate these fevers, and neuroses of various kinds are not uncommon. Meningitis may also occur. (The Estivo-Autumnal Malarial Fevers, by Chas. F. Craig, 1901.)

Diseases of the Respiratory System.

Both lobar and lobular pneumonia occur as complications, the first being by no means a rare complication. Early observers held that the pneumonia accompanying malaria was directly due to malarial poison; but recent investigations have conclusively proven that the malarial parasites, per se, are unable to produce a true pneumonitis. The pneumonia complicating malaria will always be found, upon bacteriological examination, to be due to the diplococcus pneumoniæ.

There is a form of pernicious estivo-autumnal fever in which the symptoms are chiefly referred to the lung and are identical with those of lobar pneumonia. The condition present in these cases is due to a localization of the parasites in the lung capillaries. Microscopical examination of the lung, in such cases, shows that the lesions present differ widely from those common to lobar pneumonia.

Pneumonia may complicate the malarial infection at any time, and may develop suddenly or insidiously. The course of the pneumonia is generally but little altered, although the disease is apt to assume a more severe type than when it occurs alone. Pneumonic symptoms may entirely mask the

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malaria, or, on the other hand may be so slight as to be masked by the malarial infection.

The prognosis in pneumonia complicating estivo-autumnal malaria is always very grave, many cases proving fatal. The mortality is stated by Ascoli to be as high as 60 to 78 per cent. in patients who have had repeated estivo-autumnal attacks. Death may occur in from 36 to 73 hours from the initiation of the attack.

In cases which recover, the convalescence is very slow, resolution being greatly delayed An empyema may result in rare instances. Not rarely the affected portions of the lung become fibroid, and a chronic fibroid pneumonia results, or a bronchiectasis appears.

Pneumonia septicemia as complicating malaria, has been described by Bignami, Marchiafava and Nazari.

Acute bronchitis is a very common complication of the estivo-autumnal fevers, being observed in about 40 per cent. of the cases. It may be very persistent, and often very markedly weakens and exhausts the patient. A septicemia due to pneumonia infection has been described by Marchiafava, Bignami, Nazari and others as complicating malaria.

Tuberculosis. Tuberculosis and malaria may occur simultaneously in the same individual. It is known that both diseases are very commonly associated, and that even fatal cases of estivo-autumnal malaria may occur in patients suffering from active tuberculosis. Marchiafava and Bignami have reported a very interesting case of this kind. Marchiafava claims that "if the malarial infection attacks organisms affected by tuberculosis, the latter is not arrested, but acquires a tendency to spread and produces miliary tuberculosis." The same authority states that "according to our experience, malarial cachexia does not predispose to tuberculosis, as do other cachexias."

Pleurisy and malaria are sometimes associated, but it is a somewhat rare complication, and when it occurs pursues the same clinical course as usual.

It has been stated that if quinine be administered to a patient suffering from any of the complications mentioned, it will be followed by a cessation of the malarial symptoms, and the complicating process will run its usual course. This

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is of course not invariably the case, for certain forms of chronic malaria do not improve under quinia and again sometimes the complicating process may become much better, as in pneumonia for example.

The diagnosis of estivo-autumnal malaria, when its symptoms are masked by complications, is only to be made by the microscopical examination of the blood.

Diseases of the Circulatory System.

Those *organic* diseases of the heart which happen to be present at the time of an estivo-autumnal infection will as complications, render the prognosis exceedingly grave.

Acute endocarditis may occur as a complication and the *ulcerative* form of the disease or may follow a pneumonic complication.

Functional disorders of the heart are very common complications of the estivo-autumnal malarial fevers. A slow pulse during canvalescence is common, sometimes counting but forty to the minute.

Diseases of the Genito-urinary System.

Nephritis is one of the most common complications of these fevers, and occurs in about three per cent. of the cases. As a rule, the nephritis is an acute one, and generally subsides shortly after the cessation of the malarial attack. Nephritis is as much a consequence of malaria infection as it is a complication.

Orchitis and *epididymitis* are rare complications but as a rule a history of gonorrheal infection is usually to be obtained. There are no reliable evidences indicating that there is an orchitis due to the malarial poison, i. e., a malarial orchitis.

It is impossible within the short time to which this address is limited to give an exhaustive treatise on all the possible complications and sequelæ of malaria, nor can it be expected that the diagnosis could be fully presented with such regard to detail as the importance of this subject requires. The main object of my report, as I was requested to make it by the President and committee, was to emphasize the relationship between chronic malaria and disturbances of the digestive organs. And even in this regard I am conscious that the paper is incomplete. If I have succeeded in

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only stimulating your individual thinking, and given an incentive to personal research along these lines, I will be satisfied with the little progress that has been accomplished.

In conclusion I desire to express my appreciation of the honor conferred upon me in the invitation to address your representative body.

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Physical Signs of the Heart,

How Detected and How Described.

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IT was with feelings of no little timorousness for the results that I considered the invitation to prepare a paper for this meeting; but, appreciating the great honor conferred, and notwithstanding the temerity entailed in the undertaking, I resolved to accept. I desire to state at the start that originality is not a conspicuous feature of the work, it being principally composed of excerpts from prominent authorities on the subject, feeling sure that if in my case your decision shall be "No rate," you will not fail to recognize their merit. I refer to Gould and Pyle, J. M. Da Costa, Alfred Loomis, Guttmann, Reference Handbook of the Medical Sciences, and the Twentieth Century Practice of Medicine.

The subject selected is:

PHYSICAL SIGNS OF THE HEART: HOW DETECTED AND HOW DESCRIBED.

In making a physical examination of the heart, five physical methods of diagnosis are employed, to wit: (1) Inspection; (2) Palpation; (3) Mensuration; (4) Percussion; (5) Auscultation. These methods are best employed when the patient is in a quiet room, with a good light, and in a sitting posture during inspection, in the recumbent position during percussion, and compared in both positions during auscultation. The dress must be completely removed from the chest and the patient placed in such a position that both sides of the thorax are presented in like condition. For the purpose of indicating visibly the physical signs discovered an aniline pencil may be used.

By inspection we note certain appearances of the precordia: (1) Prominence in this area; (2) the size of the

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interspaces; (3) the color of the skin; (4) the position of the apex-beat; and (5) the strength of the apex-beat.

The Apex-Beat.

The apex-beat is that portion of the heart that touches the chest-wall at each pulsation synchronously with the first sound of the heart. The apex-beat is also spoken of as the "cardiac impulse," when it is felt by the hand over the precordia.

The position of the apex-beat in health is between the fifth and sixth ribs, or the fifth interspace, half of an inch within the mid-clavicular line. The apex-beat in health is movable. In distention of the stomach by gas it may be carried upward. In deep inspiration it is carried downward by the expanded lung. In children the apex-beat is usually in the fourth interspace, and nearer the nipple line.

In disease the apex-beat may be displaced: (1) Upward; (2) downward; (3) to the right or left. If upon careful inspection we find the apex-beat visible, dots are to be made with the pencil over the area where it is observed. Pulsation in the epigastrium, regions of the aorta or pulmonary artery, or in the vessels of the neck, is denoted by the sign "Pn" at the point where it is seen. If venous pulsation, write "Vpn." If with the pulsation there is retraction of the thoracic wall, use the sign "s retro." A notable bulging of any portion of the surface may be outlined by dots.

By palpation we determine: (1) Force of the cardiac impulse; (2) frequency of the heart's action; (3) regularity of the movements (rhythm); (4) thrill. The area of the apex-beat or impulse, by the application of the tip of one finger, may be outlined by short broken lines in contradistinction to the dots used for inspection. Pulsations felt elsewhere are to be recorded in the same way. The position of a thrill is indicated by a serrated line. If the thrill is presystolic, it comes to an abrupt end at the beginning of the ventricular systole, thus differing from the systolic and diasotlic thrills. This abrupt ending may be indicated by a vertical line at the termination of the horizontal serration; the length of the latter having some relation to the duration of the thrill.

By mensuration we determine the circular measurement of the chest, and compare the two sides. A good instru-

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ment for the purpose is a steel tape-measure. The points of measurement are the spinous process of a vertebra behind, and the median line in front. The two sides are then compared. Normally the right side of the chest is slightly increased in right-handed individuals. In disease it is often much increased on the left side in certain forms of congenital heart disease when hypertrophy supervenes. By percussion we determine the shape and area of cardiac dulness. There is normally (1) superficial cardiac dulness and (2) deep cardiac dulness. The normal area of superficial cardiac dulness is studied best by light percussion. It extends from the fourth costo-sternal junction to the apex-beat; from the apex-beat to the junction of the xiphoid cartilage with the sternum; thence up the left border of the sternum.

The normal area of deep cardiac dulness is studied best by deep percussion. It extends from the third left costo-sternal junction to the apex-beat; from the apex-beat to the junction of the xiphoid cartilage with the sternum, thence up the right border of the sternum to the third rib. The area of the cardiac dulness may be increased or diminished in disease.

The use of the finger as a pleximeter for percussion is wanting in precision. It is therefore best to use a pleximeter of vulcanite or of glass. The best results may be obtained with a vulcanite in the shape of an inverted T. In using it, the lower plate is pressed against the chest wall by the tips of the fore and middle fingers. The mind is to be fixed on vibrations, whether heard or felt by the finger-tips, and at the spot where the vibrations are sensibly modified a line is to be drawn with the pencil. By approaching the heart from different directions and uniting the marks thus made, the outline of the cardiac dulness is determined and denoted.

During auscultation, as before stated, the posture of the patient should be recumbent when examination is first begun; then the patient should assume the sitting posture and the examiner should compare the variations, if any. At times the patient should hold the breath. There are two methods of auscultation: Immediate and mediate.

The immediate method, by which the ear or stethoscope is applied to the bare skin of the chest is to be preferred to

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the mediate method, in which there is an intervening cloth or garment. By auscultation we determine: (1) Quality; (2) intensity; (3) rhythm; (4) murmurs. When the ear or stethoscope is placed upon the apex-beat of the heart, two sounds are heard, called the first and second heart-sounds. The first sound of the heart occurs during systole, and is heard when the apex of the heart impinges against the chest-wall, producing a low-pitch sound, and is caused by the contraction of the ventricle, tension of the auriculo-ventricular valves, and the impact of the heart against the chest-wall. The first sound of the heart is synchronous with the apex-beat and pulse of carotids. It precedes the pulse in the radial arteries. The second sound of the heart is heard shortly after the first sound. It is termed the second, or diastolic heart-sound. It is short and high-pitched. It is caused by the closure of the aortic and pulmonary valves. The first sound will therefore be softer in quality, lower in pitch, and more prolonged than the second sound. Both sounds may be accentuated or weakened.

Rhythm of Heart-sounds. The acts which constitute a complete cardiac pulsation are: (1) Contraction (systole); (2) dilation (diastole); and (3) rest of each of its cavities. The complete heart-action, from the ending of one systole to the beginning of the next, may be called its cycle. The periods of rest and the periods of action should follow each other in regular time. This is called the rhythm of the heart. Normally the systolic sounds are followed by a short silence and are preceded by a long silence. The diastolic sounds follow the systolic sounds in quick succession. This is most important to remember, for if these regular intervals of rest are disturbed, the rhythm will be altered, indicating cardiac disease. Irregular rhythm of the heart-sounds is observed in both functional and organic disease of the heart.

By a heart-murmur we mean an abnormal heart-sound. Cardiac murmurs are produced either within the heart (endocardial murmur) or upon its surface (pericardial murmur). Heart-murmurs are also divided into (1) organic and (2) inorganic.

For auscultation it is better to use a double stethoscope or a phonendoscope. Any accentuation of any of the normal

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sounds can be expressed by the sign + drawn with the pencil within the area in which such sound is noted. All murmurs are also to be indicated. An "S" denotes the presence of a systolic murmur at the point at which it is placed, and an arrow drawn on the chest shows the direction in which this is propagated. In many cases it is advisable to map out the area of audibility by short broken lines. A diastolic murmur is indicated by a "D" placed at the point of maximum intensity. "Pr S" would denote a presystolic murmur, and broken lines should be used to show the area in which it is heard.

The valves of the heart all lie in close proximity to one another, and within a space of less then an inch square. The relations the different parts of the organ bear to the chest-walls are as follows: The auricles are on a line with the third costal cartilages. The right auricle extends across the sternum to the right side of the chest. The right ventricle is placed partly under the sternum, and partly to the left of it. Its inferior border is on a level with the sixth cartilage. The left ventricle lies within the nipple, between the third and fifth intercostal spaces. The position of the apex has been described above. The base of the heart corresponds posteriorly to the sixth and seventh dorsal vertebrae, from which it is separated by the aorta and œsophagus. The greater portion of the anterior surface of the heart is removed from the thoracic walls by the lungs. The right lung extends to the middle of the sternum. The left lung spreads out as far as the fourth cartilage and covers the whole of the left ventricle, except the apex. The part of the heart that remains exposed consists thus mainly of the lower portion of the right ventricle; it presents the shape of a rude triangle. At the left border of the sternum, on a level with the third intercostal space, lies the mitral, and in front of this, more directly under the sternum, and but a few lines lower down, the tricuspid valve. The pulmonary orifice is seated opposite the junction of the cartilage of the third rib with the left edge of the sternum. Near it, very slightly lower, but placed more obliquely, are the aortic valves.

In organic heart disease, the points to be looked into are the general facies, the pulse, the shape of the thorax, the

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position of the apex-beat, abnormal or excessive pulsations, valvular shocks and the presence of thrills, the area of cardiac dulness, the heart-sounds, associated murmurs, and various complications. Excessive or persistent pallor always calls for an examination of the heart; the face often is dusky and subicteric in hue, or there may be alternate flushings and palings.

Each valvular lesion has a pulse peculiar to the pathologic condition present. In mitral leakage the pulse is usually well filled, without peculiarity; in mitral stenosis it is small, badly filled, often irregular and intermittent. The pulsus bigeminus may occur. In aortic regurgitation the pulse is full and running, with sudden collapse (water-hammer pulse); in aortic stenosis very slow, thready, and badly filled. A positive pulsation in the external jugular vein denotes tricuspid insufficiency. In children, or when the disease has begun in childhood, the precordium may be prominent and the intercostal spaces widened, due to hypertrophy. The apex-beat is more or less dislocated in all cardiac affections, but may be difficult to make out; in such cases, if the patient bends forward, it may become palpable. The apical impulse is powerful and heaving in pure hypertrophy and aortic regurgitation; weak in extreme dilatation; diffuse in mitral insufficiency; punctate in mitral stenosis. An increased area of cardiac pulsation is often present in hypertrophy, and if most prominent at the ensiform cartilage and epigastrium, is due to a powerfully acting right ventricle.

Palpation. In mitral stenosis particularly, the closure of the pulmonary valves may be felt as a distinct snap on palpation over the pulmonary cartilage. Palpable thrills are valuable signs of valvular lesions, but must not be confused with pericardial frictions.

Percussion. The area of cardiac dullness is increased in pericardial effusions, hypertrophy and dilatation, aneurism, mediastinal tumors and retractions of the lung; it is lessened in emphysema and pigeon-breast. The dullness in effusion is usually pear-shaped, with the apex upward, and reaches to the right of the sternum in the fifth interspace. In such cases the apex is dislocated upward and outward, and is within the line of dullness, the heart-sounds being

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muffled, while the pulse is relatively strong. In dilatation the dull area has rarely a triangular shape, nor does it reach so high without marked pulsation, while the heart-sounds are first short and snappy. Retraction of the lung, as in fibroid phthisis, may be recognized from other signs of lung involvement. Aneurisms or mediastinal tumors may be excluded from the absence of other distinctive features.

Auscultation. The heart-sounds may be pure or impure, and may be accompanied or replaced by murmurs. An accentuated aortic second sound is present in high arterial tension from any cause. An accentuated pulmonary sound is due to an hypertrophied right heart. A reduplicated second sound sometimes occurs in mitral stenosis or insufficiency. When murmurs are present, we should note the rhythm, the point of greatest intensity, and the line of transmission. It is important, though not always possible, to distinguish a functional from an organic murmur. A functional murmur—e. g. in anæmia, is heard usually at the pulmonary cartilage, but often at the apex; it is soft, low-pitched and whiffing, systolic, and rarely transmitted so far as an organic one; and, moreover, the condition is transient. Organic murmurs, as a rule, are loud, blowing, often accompanied by thrills; hypertrophy and dilatation are present and the condition is permanent. Murmurs are systolic, diastolic or presystolic, according to their position in the cardiac cycle. A pericardial friction is of a to-and-fro rubbing character, superficial, increases on pressure, not perfectly synchronous with systole and diastole, and eventually disappears; it should not be confounded with an endocardial murmur. It should be observed that in walking the patient up and down, a murmur may sometimes be brought out that was previously inaudible. The complications may be general anasarca, effusion into serous sacs, passive congestion of various organs, hemoptysis, albuminuria or embolism.

Chronic Valvular Lesions.

The conditions are leakage (insufficiency), or obstruction (stenosis). These are due to sclerotic changes in the valve cusps, resultant from previous inflammatory processes, which lead to loss of substance, fusion of the cusps, stiffness,

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or puckering, and are often associated with deposition of calcareous material; more rarely the condition is due to atheroma resulting from alcoholism, muscular strain, or syphilis. Aortic insufficiency is especially likely to be of this nature. Such conditions react upon the heart-muscle, bringing about hypertrophy and dilatation of the various chambers. Hypertrophy is compensatory, enabling the heart to meet the increased strain, and while it is in excess, the heart works quite well and compensation is said to be intact.

When dilatation predominates, we get, consequently lowered arterial pressure, increased venous pressure, with diminished interchange of the body fluids and lessened metabolism. This leads to dyspnœa, cyanosis, passive congestion, anasarca, effusion into serous sacs, cough, headache, vertigo, gastro-intestinal catarrh, and diminution of urine. Compensation is then said to be ruptured. As to the distribution of the lesions, the mitral valve is affected in 58 per cent. of the cases, the aortic in 36 per cent., the tricuspid in 4.33 per cent., the pulmonary in 1.66 per cent. In old age valvular lesions are more likely to result from degenerative processes, as atheroma.

Mitral Insufficiency.

In these cases blood regurgitates into the left auricle, which consequently dilates and hypertrophies. An increased amount of blood is forced into the left ventricle, and it also dilates and hypertrophies; eventually all the chambers suffer. There is diffuse pulsation over the pericardium, and the cardiac dullness is increased both ways. The apical impulse is down and out. At the apex can be heard a loud, blowing systolic murmur, either wholly or partially obliterating the first sound, and transmitted well into the axilla, or even into the back. Occasionally it is quite circumscribed. The pulmonary second sound is accentuated. A systolic thrill at the apex is rare. While compensation is good, the pulse is regular, full and of low tension; later, irregular and small. Diagnosis is easy, but care must be taken to exclude accidental murmurs due to anæmia or simple dilatation.

Mitral Stenosis.

This lesion is generally combined with insufficiency. The cardiac dullness is moderately increased, mainly to the

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right. The left ventricle, as a rule, is small, and the apex is only moderately dislocated to the left. Epigastric pulsation may be marked. Palpation reveals a presystolic thrill at the apex. This is pathognomonic. At the apex may be heard a rough, grating murmur; this is presystolic, increasing rapidly in intensity, to be suddenly cut off at the onset of systole. Rarely the murmur is diastolic. Occasionally, at the onset of diastole may be heard a murmur, then a pause, and finally a short, presystolic murmur (Frantzel's murmur.) The apical shock is forcible. Gallop rhythm may be present. The pulse is small, badly filled and irregular. Extreme ascites is not common. Hemoptysis is a common feature. The presystolic murmur alone is not pathognomonic, as it has been heard in cases where at autopsy, a mitral lesion was found. Where insufficiency is present, a blowing systolic murmur at the apex is heard as well.

Aortic Insufficiency.

Leakage may be due to atheroma, ulceration or rupture of the cusps. *Cor bovinum* often results, and the condition is sometimes called "athlete's heart." The cardiac impulse is diffuse; the apical impulse is forcible and heaving, well down and out. The cardiac dullness is increased relatively more to the left. Pathognomonic is a diastolic murmur at the aortic cartilage. This is a long-drawn-out bruit, propagated downward toward the xiphoid or the apex. Generally accompanying it is a systolic murmur. *This rarely indicates aortic stenosis*, since very slight roughening of the valves will produce it. Occasionally at the apex can be heard a rumbling murmur of limited area; sometimes, but not invariably, presytolic (Flint's murmur). The aortic second sound is lacking. The pulse is full and forcible, suddenly falling in tension (collapsing or water-hammer pulse). Capillary pulsation is seen in the nails, and the spleen and liver occasionally pulsate. On drawing the thumb-nail across the forehead, the alternate flushing and paling can be demonstrated readily. On auscultation over the brachials, a systolic or diastolic shock, or both, or even murmurs, may often be heard. The condition may be unsuspected, and

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sudden death may occur. Insanity is sometimes associated with this lesion.

Aortic Stenosis.

There exists marked hypertrophy of the left ventricle and the apex is down and out. The pulse is slow, hard and of small volume. At the aortic cartilage is a loud, grating, whistling, or musical murmur, systolic and transmitted up the vessels of the neck. At the same region may be felt an intense, grating thrill, felt also in the episternal notch. The diagnosis should not be made on the murmur alone, but only when the thrill is present, as a slight roughening of the valves, without stenosis, may cause a loud, rough murmur. When insufficiency is also present, diagnosis may be impossible.

Tricuspid Insufficiency.

This condition is nearly always due to passive dilatation of the right ventricle. The physical signs are characteristic. The cardiac dullness is markedly increased to the right. To the right of the sternum, in the fourth or fifth interspace, is a systolic murmur, transmitted well to the right, together with a systolic thrill in the same region. In the neck is a positive venous pulse; the liver may also pulsate—this must be distinguished from communicated shock. The pulmonary second sound is weak.

Tricuspid Stenosis.

This is very rare, generally congenital. Cyanosis is marked and the pulse is small. At the pulmonary cartilage is a presystolic or diastolic murmur, and the second sound is weak.

Pulmonary Insufficiency.

A rare condition. Dilatation and hypertrophy of the right ventricle are marked. There is a diastolic murmur at the pulmonary area transmitted down the sternum and a diastolic thrill. There is an interruption of the vesicular breath-sounds during inspiration.

Pulmonary Stenosis.

Congenital always. The right heart hypertrophied. A systolic murmur is heard at the pulmonary cartilage, accom-

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panied by a systolic thrill. The second pulmonary sound is weak. Tuberculosis of the lungs is likely to occur.

For the proper manner in which the physical signs of the heart shall best be described, you are respectfully referred to Par. 90, Book of Instructions, 1902—always keeping in mind Par. 63, which is, in part: "Brevity must not be secured at the sacrifice of a full and complete description of the physiological and pathological phenomena found to exist."

DISCUSSION.

DR. HAYES, of the Bureau of Pensions:—Dr. Hemmeter said a while ago that life is short and art is long. The study of diseases of the heart by all the physical signs would take a life time. What we want to know is what disease of the heart a soldier has when he comes before us, whether functional or organic. In the fifteen years that I have been examining papers from you gentlemen it has often occurred that I would examine the papers in a case showing that a certain soldier at one date had no disease of the heart, to be followed a few months afterwards by a certificate that the same soldier had a serious organic disease of the heart, and that in turn to be followed by another examination and certificate that he had no organic disease whatever. [Laughter.]

Forty years ago it no doubt often occurred that a soldier had functional disturbance of the heart, caused by the events of the soldier's life, marching, fighting, etc. I had heart disease myself at Harrison's Landing, in 1862, and I discharged hundreds of soldiers from the Army of the Potomac for the same disease, but they all recovered in time and enlisted again. In these functional diseases of the heart rest for a time is all that is necessary.

The first impulse received in disease of the heart is in the mitral valve, from anæmic conditions caused by camp diarrhœa, by great exertion in marching, etc. Of course I am speaking independently of rheumatism and disease of heart from blood poisoning. The mitral valve is the first valve that suffers. If mitral disease continues, and compensation does not take place, then the aortic valve is affected; and when you have the two combined you have a serious disease, very apt to be followed by death. Compensation is estab-

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lished, however, in many cases before this second complication arises.

When rheumatism or blood poisoning takes place we see a different result in the valves. Unless the rheumatism is checked, aortic valvular disease occurs, and unless compensation takes place death comes quickly.

I think all we need to know, when a soldier comes before a board to be examined, is whether he has functional disease of the heart or organic disease of the heart—simply one or the other. If he has functional disease of the heart, certainly our education should be sufficient to enable us to discover that fact by the signs, and it should be our duty then to say plainly in the certificate how the claimant is disabled; if he has organic disease of the heart, from rheumatism or blood poisoning, then his condition is such that death is imminent, and in that case he should have the highest rate allowed by the law. [Applause.]

Now the murmurs in functional disease of the heart are the same as the organic, even to the practised ear, but the functional murmurs disappear with some rest. So I would keep a man quiet for an hour or so when he comes to be examined before making up the diagnosis. The second beat will always tell the story in the thump of the regurgitant stream from the aorta if there is aortic valvular lesion—then you cannot fail in your diagnosis. There may be some mitral lesion, even with compensation, but if you find no aortic valvular lesion, there is no serious organic disease of the heart. [Applause.]

Dr. Alleger, of the Bureau of Pensions:—I have been very much interested in the able paper that has been presented, and I desire to add only one little point in regard to heart disease.

Dr. Frost stated in the closing part of his address that he referred to pargaraphs 90 and 63, Instructions of 1902, as indicating how the Bureau desired these diseases to be reported. As the boards differ in their interpretation of these paragraphs, possibly a few suggestions with reference to the proper interpretation may be of value.

Take, for instance, valvular disease of the heart, in which there is enlargement. The certificate often shows

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dilatation and hypertrophy, without any effort to state which is the predominant form of enlargement. That is a very important factor in considering the degree of disability. If hypertrophy predominates, the valvular lesion being well compensated, the disability is comparatively slight. On the other hand, if dilatation predominates, as manifested not only by the physical evidences of the heart, but also by œdema, cyanosis or dyspnœa, we have a much graver condition—a condition which warrants a much higher rate. Hence the importance of clearly distinguishing between the two, and really it is only essential to report the predominant form, whether hypertrophy or dilatation.

Now, with reference to the area of dullness: In many certificates we find that the area of dullness is stated to be three by four or four by five, or so many inches, and without indicating whether reference is made to the deep or superficial dullness. That gives us very little idea as to the real condition and as to which part of the heart is chiefly involved when the enlargement affects one side more than the other. It is always desired that the report shall show the upper and lower and the right and left limits of the dullness with relation to the anatomical landmarks. That gives us as definite an idea of the degree of enlargement as can be given in a certificate, taken, of course, in connection with the location of the apex-beat.

The question comes up, then, in regard to reporting this enlargement, whether it shall be the deep or the superficial area that is to be reported. You will all agree that the deep area is the one which gives us the greater information if it could always be accurately mapped out; but it is so very seldom that the deep area can be accurately mapped out that, by common consent, boards should, as a rule, report the superficial area, which can almost always be mapped out.

Of course we understand the difficulties that you meet in special cases, but, as a rule, the superficial dullness can be arrived at and described.

Perhaps a word may be said here in regard to complications. First, as to dyspnœa, œdema and cyanosis, just as in ordinary clinical reports one is apt to simply say that the heart was slightly enlarged, or moderately enlarged, or greatly en-

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larged, so will he merely note the presence of one or more of these symptoms; but, for purposes of rating, those general terms do not afford sufficient information. If a soldier is suffering from dyspnœa when he comes before the board it becomes important to know whether that dyspnœa is constant, if that can be determined, or whether it is present only during excitement or after exercise, and how severe the dyspnœa is, whether slight, moderate, or marked. If there is œdema, it is equally important to state the extent thereof, and whether there is a distinct pitting on pressure or only a boggy condition of the tissues that is so often reported for œdema. With cyanosis also, the degree to which the patient exhibits this symptom becomes important, whether it is limited to a small area as beneath the finger nails, or in the lips, or is general, and whether it is constant or observed only after the heart has been put on a strain by exercise.

It is always important to know whether, when there is a valvular lesion that is not well compensated, there may be congestion of other organs, as shown by the urine analysis and the condition of the lungs and the abdominal viscera. If symptoms exist in the lungs, kidneys or abdominal viscera, then it becomes important to know whether they exist merely as complications due to congestion, or whether they are primary diseases which constitute important factors in the case but are of different origin.

All these factors must be taken into consideration in adjusting the proper rating. It is this matter of rating which makes it so important that these descriptions be given with a view of showing the degree of disability, and the nature and extent of all complications so that the office may differentiate between the disability and other conditions or complications dependent upon the heart lesion, in whole or in part, and those that are not dependent upon it.

Dr. Rice, of Ohio:—It seems to me that Dr. Alleger is simply speaking of cases that are extreme. We meet with lots of heart troubles that never have any œdema, cyanosis, or anything of that kind; yet the patients are incapacitated for manual labor and they drop off. They are unable to do work of any heft—that is, any lifting or rapid work, or anything of that kind.

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As to the area of dullness, there are a great many cases where it is practically impossible to make out the area of dullness, because the lung extends over the heart, and in some, the walls are very thick, which prevents you from accurately estimating the area of cardiac dullness. In those cases where they have marked œdema, cyanosis or dyspnœa, the patients are simply in the last stages; they simply have got to stay at home, and that is where you will have to examine them.

DR. ALLEGER:—If Dr. Rice should come in contact with as many certificates as I do he would find that the cases of œdema, cyanosis and dyspœna reported by boards are not so few as he imagines. Of course we recognize that there are cases of extreme gravity, cases where men may drop off, without either cyanosis or dyspnœa. But where they do exist, my idea was that they should be reported accurately and distinctly so that the Bureau could gauge the amount of each; and where they do not exist they should be excluded by a positive statement to that effect. Of course it is taken for granted that all rational evidence would be properly reported. My remarks relate only to these particular points, with reference to which I have seen so much deterioration in the certificates.

DR. STILLSON, of Indiana:—Mr. President, I fear I tread on forbidden ground, but in the practice of medicine in all its departments I think it is a good plan in making out a diagnosis, not only to state what is present, but to state some of the things which are not present. That has been my rule in making out the diagnosis and in certifying cases in my department.

I am aware that I am particularly rusty on the heart, but still we frequently see in the instructions that a request is noted "Give an outline of symptoms of heart;" or the question will be asked "Do you find any evidence of rheumatism?" It has always been my rule to note the pulse in quietude and also after exercise, that is, unless the soldier, in my judgment, was to feeble to exercise. Very frequently it has been my experience to find that masked symptoms have developed very rapidly upon requesting a soldier to exercise, and I have frequently found a murmur which I was

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not able to find upon a previous examination of the patient in a sitting posture; that is, I would find a murmur after having him chase up and down the room several times.

It has been my rule to note the position of the apex-beat, and I was particularly interested in Dr. Frost's description of the normal position of that beat and its relation to the sound of the mitral valve, and the nature and relation of the apex-beat and its distance from the probable situation over the aortic sound. These are two landmarks which we need in order to overcome the difficulty of making out a practical working diagnosis. That is what I understand the department wants, a practical working diagnosis. It is not supposed that we should keep our eyes and ears closed when an applicant comes into the office. You size him up; you get his complexion, his height and probable weight, and in a great many instances you can estimate his height and weight very quickly if you have sufficient judgment and observation. Of course you have your scales for weight, and you can measure his height, and you get the excess of weight. You follow the methods usually followed in life insurance examinations. I need not go farther on that point.

These little points all come up, and I take it that it is not such a difficult matter to make out at least what I call a practical working diagnosis, and consequently I believe that where cyanosis is not present it is well enough to mention that fact. I think the department would be glad to have you mention it if the general area of dullness is enlarged, and would also be glad to have you mention these salient points in making out the diagnosis, viz.: That the pulse is, say, 80 in rest and 120 after exercise; that there is a systolic murmur of the heart after violent exercise; that the apex-beat is pushed over to the right or down near the center; that there is a scraping sound of the aorta; that there are symptoms of rheumatism;—that points like these should be mentioned without going into other details. It would, perhaps, be well enough also to give a general physical description of the claimant, his excess of weight, and, perhaps, even to express the opinion as to whether he is likely to drop dead suddenly. It seems to me those are the points the department desires to have.

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Although I claim to have very little knowledge in these special departments except what I remember from my student days, and although my line is entirely outside of these specialties, yet I think that is what the government wants, a practical working diagnosis. [Applause.]

DR. EATON, of Massachusetts:—One gentleman has stated that 90 per cent. of cases are rheumatism and another has given 68 per cent. in certain sections. I think heart disease comes in more frequently even than rheumatism, perhaps oftener than any other disease. Is this merely an accident, or because the soldier thinks he has heart disease? Is there some foundation for it? I have been practicing for a long while. I do not come here to pose as an expert on heart disease, but to speak a few plain words. The doctor who just spoke was right to the point, and I wish to add a little to his remarks.

We make a diagnosis as nearly as we can, following the rules and instructions. We have the soldier before us, and while we do not find œdema in two-thirds of the cases, or 30 per cent. of cyanosis, yet from what we ourselves can observe of the man and from his own statements we know he has some form of heart disease. If it is organic it is pretty serious; if it is functional, it is not so serious. Many of these old soldiers are 55 years of age, and the greater portion of them are over 60. I know from the statistics of the G. A. R. post in the city of Salem, Massachusetts that in the year 1901, 80 per cent. of the soldiers who died that year, died from heart disease or from complications of that with other diseases. I also remember a town in which there was a smaller post where six soldiers died during the year and five of them died suddenly, from heart disease, or after prolonged sickness from heart disease with kidney and dropsical complications. That is, five-sixths in one town, died from heart disease, and 80 per cent. in the city of Salem died from the same cause, that is to say, the doctor's certificate gave as the cause of death, heart disease or heart disease with complications.

If there is any question as to whether an applicant has heart disease or not, I believe it to be the duty of the examining surgeon to give him the benefit of the doubt,

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whether we find œdema or cyanosis or not; if upon exercise we find the pulse running up to 110, 120 or 130, if we find dyspnœa accompanying let us give the man the benefit of the doubt even if we do not get the murmurs or any absolute sign of heart disease. Let us give him the highest rating we can, because my own experience has shown me that at least 70 per cent. of the old soldiers who die, are dying from heart disease simply or as an important factor in the case. [Applause.]

DR. FROST, of Massachusetts (in concluding):—I desire, Mr. President, to thank the gentlemen of the Association for the manner in which they have discussed this paper. I do not think I care to say anything further in closing.

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Remarks Upon Diseases of the Respiratory Tract.

BY

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AMONG the commoner ailments of claimants for pension are "catarrh" and "disease of the lungs," these being the two general divisions which the civil war soldier makes of diseases of the respiratory tract. It is the common belief among old soldiers that a pneumonia contracted and suffered from in the service, has left behind it conditions which can be localized and differentiated even at this late day. Again, it is quite generally believed that pulmonary lesions, secondary to acute diseases of the lower air tract suffered from in earlier life, remain as distinct factors of ill health, to be located, described, and rated even at this remote period of time.

The Upper Air Tract.

The respiratory tract may be divided for convenience into two general topographical sections—upper and lower. The upper air passages extend from the nasal orifices to the larynx; all below that organ belongs to the lower tract. In the upper area are situated the nasal cavities, the pharynx, and the larynx; in the lower are located the trachea, bronchial tubes, and air vesicles. The latter two groups are surrounded and held together by parenchymatous lung tissue, the whole constituting, in general terms, the lungs. We need not deal, at this time, with the pleura, because it is not, strictly speaking, a breathing organ.

Of all the diseases to which the upper air tract is liable, nasal catarrh is by far the most common. It afflicts all ages, conditions, and every environment of mankind, though

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some localities are remarkably free from it. Others, however, as for example, the North Atlantic seaboard and the great lakes region, are noted for its prevalence. While, therefore, it is not, strictly speaking, a climatic disease, yet climate exercises great influence over its general existence or severity—one or both. It may be stated, in general, that moist atmospheres, with sudden changes of temperature, predispose to catarrhal diseases. It must not be forgotten, too, that rheumatic and gouty diatheses are underlying etiological factors of great moment in predisposing to catarrhal inflammations of the respiratory tract, especially in the naso-pharynx, and this makes the subject one of special interest to pension examiners.

Naso-pharyngeal Catarrh.

However, before entering into details let us for a moment consider a few general features that lie at the threshold of the topic. In the first place there are many misconceptions relating to so-called nasal catarrh, both among laity and physicians. The former quite generally believe that the disease leads ultimately to ulceration of soft parts and necrosis of bone; that it "runs into consumption;" that inflammation of the air tract is liable to be followed by similar conditions in all the cavities lined with mucous membrane, such as the stomach, intestinal and genito-urinary tracts; in short, that all the mucous membranes are weak, nasal catarrh being an index of the fact. There is no just ground for such belief.

Physicians know that simple catarrhal inflammation of the nasal passages results only in hypertrophy of the tissues, whereas ulceration and necrosis belong to syphilis or some other systemic dyscrasia. There is no doubt that chronic catarrhal inflammation tends to weaken tissue resistance and that it even may cause pharyngitis, laryngitis or bronchitis. The disease, however, does not change its type to become tubercular in character. It has been asserted that a person with aggravated catarrhal disease of the upper air tract, and who has a family history of phthisis, is more liable to contract consumption than would be the case if the upper air tract

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were free from disease. I am not aware, however, that this asseveration has been established by any clinical observations. So, while we admit the tendency of catarrhal inflammation to travel downward invading even the lower air passages, it still remains in its new location the same type of disease—a catarrhal affection.

It is, perhaps, unfortunate that a word which describes only a symptom should be so generally accepted as the name of a disease; and yet this is precisely what has happened with the word "catarrh." The Greek origin of the word signifies "to flow downward," i. e. a discharge, and when we use the term nasal catarrh we mean that the person has a nasal discharge, acute or chronic, as the case may be. If we say a person has chronic naso-pharyngeal catarrh, we mean he has a chronic catarrhal inflammation of the upper air tract.

The clinical picture of an ordinary catarrh may be stated as, first, a liability to take cold; second, swelling of the tissues and obstruction of the nasal air space; third, accumulation of thick mucus in the fauces. These are the three prominent factors, all more or less intimately associated, and following each other in such rapid sequence, that it becomes difficult oftentimes, to locate the lesion. But it is highly probable that in most instances naso-pharyngeal catarrh is a hypertrophic rhinitis, and that the latter in turn depends upon a deformed septum for its origin. Acute rhinitis, that is, acute inflammation of the mucous lining of the anterior nasal passages, is a disease of frequent occurrence, and when often repeated in a given case leads to the chronic form known as hypertrophic rhinitis. The location of the latter is most often the inferior turbinates, though the middle turbinates sometimes become similarly affected.

Since deformities of the nasal septum play such an important part in the causation of catarrhal diseases of the upper air tract, it becomes of interest to inquire for a moment into the etiology of these deviations. The weight of testimony would indicate that, first, traumatism plays an important part in producing septal deviations. I do not mean by this that there must needs have been a serious external blow, one, for example, hard enough to cause external deformity or fracture of the nose, or to visibly

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deflect or displace the septum. But, in young life, while the parts are soft and plastic, a fall on the face may cause a rupture of some of the sutural attachments of the septum, or push the cartilaginous septum against the vomer, or the perpendicular plate of the ethmoid, sufficiently to set up a mild form of inflammatory action. It is easy to conceive that from such a blow morbid processes may readily result in an angular deflection which, in a few years could and probably would cause limitation of air space and obstruction to breathing.

In a few years more, or even after the lapse of many years, new conditions arise, new environment takes place, new exposures are made, which singly or combined set up chronic hypertrophic inflammation of the mucous linings of the nares. It requires no stretch of the imagination to comprehend that such a morbid lesion is the result of a slow process of development, giving rise after many years to chronic catarrhal conditions, and that the original starting point is a slight injury received in childhood or infancy which attracted no attention whatever. The great point to be borne in mind is, that chronic nasal catarrh witnessed in adult life and old age, may be the result of a morbid process beginning in infancy in a traumatism so slight as to attract no attention, except that the child has "bumped his nose." This is entirely compatible with the history of disease and, in my view, accounts for the fact that so much chronic nasal disease is observed among old soldiers.

Again, in looking for causes we must not forget that the acute infectious diseases of childhood, play an important role etiologically speaking in the chronic catarrhal diseases of the nasal passages of after life. In a child that has already a deflected septum from causes just mentioned, measles, scarlet fever, diphtheria, and even typhoid fever, may leave as a sequel the slow inflammatory processes that in later years cause serious nasal obstruction.

Still again, irritants such as exposure to cold, foreign bodies, hot air and steam, fumes of gases like chlorine, bromine and ammonia, together with many other vapors, besides dust from elevators, mines and factories, act with great direction and insistence upon nasal passages already

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prepared and made sensitive, by conditions set up in the manner described, during early life.

That systemic diseases such as gout and rheumatism and allied conditions, act as predisposing causes of nasal disease is an admitted fact, while age must be reckoned with in this relation, the resistance being greatest in adult middle life, and least in youth and old age.

Let me invite attention for a moment to the serious nature of the malady commonly designated as naso-pharyngeal catarrh. Too often it is considered lightly, or as having no special importance,—little more in fact than a wart or a corn. It is, however, a disease of serious potentiality as every experienced physician knows. Obstruction of the nasal cavities often causes mouth breathing which is a most unfortunate condition. This method of breathing not only renders the individual more liable to infection through the inspiration of germ-laden air but, likewise, it causes throat irritation, bronchial catarrh, and, indeed, may lead to serious pulmonary disease.

Stenosis of the nasal passages is one of the earlier symptoms of chronic nasal catarrh,—usually there being an alternating stenosis of the two passages. This latter phenomenon Bosworth believes to be pathognomonic of deflection of the septum. The effects of nasal obstruction if grouped would make a long list. Here are a few: 1, swelling or redness of the external nose; 2, intolerable itching of the nostril; 3, headache; 4, vertigo; 5, elongation of the uvula; 6, hypertrophy of the tonsils; 7, deformity of the chest; 8, spasmodic cough, asthma, and hay fever; 9, aphonia; 10, snoring; 11, constant or oft recurring catarrh of the pharnyx, larynx, trachea, and bronchi; 12, perversion of the senses of smell and taste; 13, deafness; 14, eye affections; 15, stammering; 16, dyspepsia and gastralgia; 17, palpitation of the heart; 18, muscular rheumatism.

That the voice suffers changes in catarrhal disease is a fact of common observation. This in part is due to partial closure of the nasal chambers, and in other part to the laryngeal hyperemia secondarily set up by the catarrh. Various ear troubles are well known to arise from naso-phrayngeal catarrh. Impaired hearing may develop either

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from nasal stenosis, or by extension of the inflammatory process to the tympanic cavity. Numerous neoplasms of the respiratory tract are attributable to nasal disease, and it is debatable also whether malignant growths may not arise from the same source, cases having been reported that tend to substantiate that view. Diseases of the accessory sinuses, too, frequently take their origin in obstructive nasal disease, drainage of these cavities thereby being interfered with. Finally, neuroses of the respiratory tract, and neuroses affecting other parts of the body are sequelæ of naso-pharyngeal disease,—an important fact to be remembered.

I have by no means exhausted the list of conditions and morbid changes that have their beginning in catarrhal inflammations of the upper air tract, but enough have been enumerated to serve the purpose of this occasion, which chiefly is to point out the grave possibilities lurking in the train of a "simple catarrh." In other words there is, I asseverate, no such simplicity in this affection as is popularly believed, and too often is permitted to go undisputed by physicians.

There are obvious reasons why this discourse must limit itself to a cursory, general view of the subject. It is, however, one that we, as examining surgeons, are necessarily very much interested in, because we have to deal with it so frequently, either as a local condition or in its remote general effects. The old soldier suffering from the malady is entitled to great consideration. He is ignorant of its import, hence easily falls a prey to the horde of quacks which appeals to his prejudices. He may have a simple form of the disease so far as its local manifestations are concerned; for example, one in which a slight operation may offer relief or cure, such as removal of a bony spur from the septum; or the snaring of an adenoid; or, again, the incising of an obstructive turbinate. But he is content to rely upon an advertised "catarrh cure," rather than to consult a laryngologist; indeed, his impecunious state is often a bar to an indulgence in that luxury. Moreover, often the gravest conditions cause the least distress; whereas, slight lesions may produce intense irritation. The first are neglected until great, perhaps irreparable, damage is done; while

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the second are treated tentatively by incompetent persons. For these and other reasons not necessary here to enumerate, I repeat, the old soldier suffering from chronic affections of the upper air tract, is entitled to the best attention and most considerate judgment of the examining surgeon.

The Lower Air Tract.

Passing now to a brief consideration of the diseases of the lower respiratory tract, we find the field somewhat limited if we are to consider only such as have their origin in the civil war service. The acute diseases are necessarily eliminated from the discussion as far as concerns pension examiners. Of the chronic forms phthisis pulmonalis is practically set aside as a primary affection, because those who contracted it in the military service during the war of 1861-5, are either cured or have gone to their reward, though there are many cases resultant from the Spanish war. It is, however, quite possible that occasional cases of tuberculous lung disease may yet be seen as secondary to some other form of affection either in the respiratory tract or other organs, among civil war soldiers. In my experience it is a disease rarely seen in the examining room of the pension surgeon. At all events, it is of easy recognition and comparatively of short duration. In its first stage it is susceptible of cure, but unfortunately it is not often seen early, and in its later stages it usually becomes fatal within a short time.

Chronic Bronchitis.

A disease of frequent occurrence among old soldiers is chronic bronchitis, which is a catarrhal affection of middle or advanced life. It may appear as the result of repeated acute attacks, but more commonly as we see it, it is a primary disease assuming from the beginning a chronic type. Its development in most cases is gradual, extending over a period of years. Generally speaking the symptoms are more marked in cold weather, and the "winter cough of the aged" is a form of the disease that is recognised by clinicians, as well as by the laity. Cough is, perhaps, the most troublesome symptom, and it unfortunately occurs

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chiefly at night, followed frequently by free expectoration in the early morning hours. It is associated many times with the gouty and rheumatic diatheses and occurs, too, in diabetic subjects, while it is common in both subacute and chronic forms in persons who drink vinous or alcoholic liquors. The presence of toxic elements in the blood seeking exit through the bronchi, serves to keep alive a chain of symptoms difficult to control, or impossible to cure.

It is essentially a disease of the larger bronchi, but there is always a tendency to exacerbations more or less acute, that may cause extension to the smaller tubes, and if they become obstructed serious results may ensue. Broncho-pneumonia, too, may result from further extension to the capillary bronchi. However, the most common sequelæ in long standing cases is pulmonary emphysema and bronchiectasis, to which co-existing asthma may forcefully contribute. To these dangers must be added further the liability to dilatation of the cavities of the right heart with consequent pulmonary engorgement, congestion of the liver or other viscera, and lastly, edema of the extremities.

Chronic bronchitis is not classed, in itself, as a dangerous malady, at least not immediately so; but, indirectly, from its aggravating effects upon other disorders it may cause death from the complications it creates. Constant coughing, too, may further weaken a dilated and already laboring heart. Hemorrhages sometimes prove temporarily beneficial by relieving pulmonary congestion, but by and by, especially in feeble or aged persons, secondary manifestations may prove fatal. For these and other reasons chronic bronchitis is not to be regarded with indifference or as a slight affection in the old soldier. After secondary changes have taken place in the tubes it is incurable, hence treatment can only palliate. The tendency of rheumatic subjects to develop bronchitis is very marked, and such cases should be guarded against exposure with extreme care.

Asthma.

One of the affections of the respiratory tract quite common among civil war veterans is asthma. It is generally admitted to be a neurotic affection, characterized by

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spasm of the bronchial muscles and often associated with hyperemia of the bronchial mucous membrane. Since Hyde Salter's exhaustive treatise on asthma, published in 1860, many investigators have studied and written upon this fickle malady, yet none has disturbed his assertion of the neurotic character of the affection. Bosworth thinks it is a vasomotor bronchitis, and that the lesion in a paroxysm of asthma is a vasomotor paresis of the bloodvessels supplying the bronchial mucous membrane.

In my examination of soldiers I have been impressed with the frequency in which asthma was claimed, and with the comparative infrequency that physical signs of the malady were detected. I have been curious to learn whether the observation of other examiners corresponded with my own in this respect. I further observed that in all cases in which asthma was claimed and described there was intranasal disease of some variety, frequently associated, too, with bronchial catarrh.

In reflecting upon the subject I recalled a conversation with Bosworth held many years ago, in which he directed my attention to the relation of lesions of the nose and nasopharynx, to so-called asthma. I did not pay much heed to the subject at that time, but since the observations made in pension examinations it came back to me with much force. As this subject may be regarded as of some importance, I will quote from Bosworth's published writings somewhat in extenso.

About the time of our conversation it appears that Bosworth was preparing a paper on this very subject which later was published. In that monograph he asserted that "a large majority, if not all, cases of asthma are dependent upon some obstructive lesion in the nasal cavity. This is evidenced by the immediate relief from the exacerbation by the use of cocaine in the nose, in every case in which I have tried it, and, furthermore, by the cure of so many cases by the removal of the obstructive lesion in the upper air passages."

In another place, writing a few years afterward, Bosworth confirms this opinion, and further explains the fact, by pointing out the intimate relationship between the

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nose and lower respiratory tract, asserting that the respiratory functions of the nasal mucous membrane were overlooked until very recently; that even as late as 1878, Remy alluded to the nose as the organ of olfaction, asserting that its other functions are purely secondary and adventitious; that the great water-secreting function of the nasal mucous lining is not for phonation and olfaction, but for respiratory purposes; that the most intricate, most delicate, and most important part of the whole respiratory tract lies in the nose; that it resides in the turbinated tissues; that these bodies supply inspired air with moisture, pouring out upon their surfaces 16 ounces of water in the course of twenty-four hours; that in this way the inspired air becomes saturated with moisture, and that this function is regulated with such nicety, as to meet the changes from dry to moist atmospheres and the reverse, often sudden in character; all of which goes to establish a most intimate connection between the upper and lower portions of the respiratory tract. He then affirms that the blood supply of the nose, being regulated by the same vasomotor tract as that which regulates the blood supply of the bronchial tubes, a disturbance in one region renders the other especially susceptible to disease processes, and that a diseased condition in the nasal cavity may predispose a neurotic person, under favorable atmospheric conditions, to an attack of asthma. I have not in this excerpt attempted to give the author's precise language but offer merely a resume of his ideas. Other observers, writing at later periods, have confirmed Bosworth's studies.

From these premises, admitting their validity, which there is no reason to doubt, it must be affirmed as an established principle that intranasal disease, and especially when the naso-pharnyx is the seat of the lesion, is not only a predisposing but an exciting cause of paroxysms of asthma. True asthma is rarely associated primarily with cardiac disease, but the dyspnea attending the latter bears a resemblance to spasmodic asthma. Old soldiers almost universally complain of heart trouble, but comparatively few suffer from real disease of that organ. They often are afflicted with palpitation and other cardiac neuroses that arise from intra-

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nasal disease, and their asthmatic symptoms in general have a like origin. It, therefore, becomes important to discriminate between idiopatic and pseudo-asthma—between the true disease and the reflex variety. This is not always easy, because there is nothing peculiarly pathognomonic in the symptoms or physical signs of nasal asthma, the paroxysms being identical with those caused by other lesions, except that preceding and after the attack the rales are dry, while in bronchial asthma they are moist.

Conclusions.

I do not speak from the standpoint of a laryngologist nor yet as an expert in diseases of the chest, hence cannot present the delicate points of the subject of this discourse with the force and impact of the trained and skilful specialist in these branches; but I have aimed to give my views based, perhaps, on no inconsiderable experience and observation, which have extended over a period of many years. I offer them to you for whatever value you may choose to place upon them, not dogmatically or with claims to original thought. Nevertheless, I shall have failed in my purpose if I have not accentuated a few important facts, with sufficient force for them to challenge consideration at your hands. They may be succinctly stated as follows:

First, that a person suffering with obstructive intranasal disease—chronic naso-pharyngeal catarrh—is not laboring under a mere inconvenience, but has a malady that involves very serious danger, a danger that increases as years advance, and that, uncured, is a constant menace to the integrity of the lower respiratory tract.

Second, the neuroses dependent upon nasal obstruction are often as serious in their symptomatology, as they are distressing to the patient. They affect not only the respiratory tract, but the heart and other organs, often masking the real disease to an extent that may embarrass the examiner in making differential diagnosis.

Third, that chronic catarrhal bronchitis is a disease of potential importance, slow in its progress, often depending upon nasal obstruction as a primary factor of cause, and is one of most serious import in the aged.

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Fourth, that asthma is, for the most part, a reflex manifestation of naso-pharyngeal disease, generally obstructive in character; that it is seldom idiopathic, but its paroxysms are similar whether it be true or false, whether it be reflex or bronchial; and that its chief importance is as a symptom of disease located elsewhere, spasm of the bronchial tubes being a distressing expression of the lesion.

Fifth, that those diseases of the respiratory tract to which the veteran soldier is peculiarly liable, are often expressions of the rheumatic or gouty diathesis, and that these dyscrasiæ are often underlying factors to be reckoned with in reference to origin as logical sequences of pathology.

As a final thought, permit me to suggest that it does not require much mental elasticity or any distortion of facts, to affirm that a civil war veteran suffering from chronic catarrhal disease of the respiratory tract, is as much entitled to rating and pension as though he were shot in battle. Such a man who, in childhood, received a slight injury to the nose causing deformity of the septum, and in young manhood through exposure in the military service, contracted intranasal disease which later, after the development of rheumatism, appears as chronic rhinitis, bronchial catarrh, or pseudo-asthma, is entitled to serious and considerate treatment at the hands of the government.

For these and other reasons that need not be multiplied, it becomes of the utmost importance for examining surgeons to give becoming weight to these maladies in their ratings. There is abundant reason to believe that the pension bureau desires the most careful consideration of the claims of the veteran at our hands, to the end that his interests be safeguarded on the one hand, and that the government be protected from imposition on the other; and especially does it desire to be generous rather than niggardly in dealing out its largess to the defenders of the nation's honor. It is in this spirit that I have presented this brief paper.

Discussion.

Dr. Lewis, of the Bureau of Pensions:—I am sure we have all enjoyed this admirable presentation upon the subject of Diseases of the Respiratory Tract. The address was not

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only interesting and instructive but to me it made an especial appeal and gave a great deal of pleasure. I have worked for years on that line myself, though Dr. Potter has probably had much more experience than I have had. I accept the resume he makes as practically the same that I would make.

In entering upon this discussion, I remember what a well-known professor used to say to us quite frequently, in approaching the consideration of a subject: "All depends upon the point of view. The sun which gives the dawn of the morning is the same sun which gives the noonday light. It has not changed at all. Our relations to it have changed." In the same way a subject may be full of light for us in our work if we are in the right relation to it. This subject, as I understand it, has been presented to the board of pension examiners with reference to the soldier and must be considered from that standpoint. A great many things might be said upon diseases of the respiratory tract that would not be called for in the present case. You are dealing with the soldier who comes to you with his troubles and his diseases, knowing that back of you is a government waiting for, and sympathizing with him and desiring to help him. The diseases of the respiratory tract are to be considered in our relation to this old soldier and that relation it is, which makes our consideration of the subject a limited one if it is to be profitable—limited to the view that is practical for the soldier's interests.

I have no doubt whatever that many diseases of the bronchial tubes are caused mainly by obstruction in the naso-pharyngeal tract. I do not think that anyone who has studied that passage, especially where it is obstructed; who has seen the way in which men breathe when that passage is so obstructed that they breathe with their mouths open, can fail to see that mouth breathing is the cause of many bronchial troubles. There is no question about the fact of the great quantity of moisture secreted by the mucous membrane of the nose, referred to by Dr. Potter. It was intended for the warming and moistening of the air on its way to the lungs. If that nasal passage is closed, how shall the air be moistened on its way to the lungs? If the air goes

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to the lungs dry and cold the result must be irritation of the bronchial membrane. I have assisted in examining hundreds, if not thousands, of pupils in the schools, and have found very few not troubled with some nasal obstruction. Most frequently there is a deviated septum and sometimes to that is added a hypertrophied turbinate. But that does not concern us here. What concerns us is the soldier. If he comes with that obstructed nose and if the air has been passing for years through that obstructed nose to the lungs you must be prepared to look for bronchial trouble and you ought to be prepared to find it frequently. One of the doctors who took part in the last discussion, referred to the number of men in the G. A. R. post at Salem, Massachusetts who had died from heart disease or had diseased hearts when examined after death. You all remember, probably, or only need to be reminded in order to remember, that the veins of the large bronchial tubes do not empty themselves into the right auricle but, through the pulmonary artery are emptied into the left auricle. Let there be a diseased heart (and this seems to be brought out, that the large majority of our soldiers do have some trouble with the heart) and the old soldier with that troubled heart is sure to have bronchial trouble in time. The blood from the bronchial tubes is not properly received. It is dammed back. What is the result? The result is that sooner or later congestion and then bronchitis comes on. If he has malaria, the poisoned blood circulates through the bronchial tubes and aggravates the condition. Boards of examiners should recognize that in the old soldiers the rheumatic heart prepares for bronchial trouble or bronchitis, as does nasal catarrh.

It has been said that soldiers complain of asthma. The doctor in his paper very well distinguished between true asthma and the false asthma. It is true that many so-called asthmas (but not the true neurotic asthmas) are due to nothing but an enlarged turbinate in the nose. Many times the application of a little cocaine to the lower turbinated body will cause it to so shrink, that the patient will be able to breathe through his nose and find relief to a so-called asthma.

How about curing asthma? There is a doctor here from Indianapolis who will call me down if I misstate. I used

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to cauterize the lower turbinated body in these so-called asthma cases. In a few days the cauterized part was healed, breathing through the nose was restored and "good-bye, asthma." I do not refer to true neurotic asthma.

But let us not get away from the old soldiers. I am in the Pension Bureau now, and I am sure that what is wanted there is to know what is the matter with these soldiers. There is every desire on the part of the Commissioner of Pensions, every desire on the part of our esteemed Medical Referee, to find out what is the matter and give the old soldiers what I am sure the government as interpreted by its laws, is anxious to give. Be prepared then to recognize these various troubles. If a claimant says he has nasal catarrh, believe him that he does not breathe properly; believe him that he has some trouble when he says he has asthma, or bronchitis, or a diseased heart. If he has not the disease technically so named, he has some trouble. Let us not forget how suddenly these old men drop off. Let us not forget how they go to the hospital, with such a simple disease as malaria, come back again cured, and a few months after drop dead from malarial poisoning. And let us look carefully for that something which makes up the alleged trouble in the old, worn out soldier and claimant.

I want to refer to what was said this morning by one doctor who had a patient six months for rheumatism, the patient in the meantime applying for a pension. When that soldier came up for examination there was no rheumatism found by the examiners, and the poor fellow lost his pension. I am not criticising anybody, but would it not have been very easy for that doctor to certify that he had treated that man for six months, and that he had had rheumatism? You size him up (the soldier before you); you know that he has certain troubles; he does not know what they are; he says that he has nasal catarrh or asthma, for instance, but you find that he has bronchitis, a very bad case, too. It is not necessary to dwell upon the unimportant things which he does not have. If you would only make it clear as to the things that he does have under cover of alleged diseases, I tell you that every doctor in the Pension Bureau would be thankful to you. The Medical Referee

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surely would, I know. I am not talking about helping to encourage fraud, but about finding in the good old soldier who has really suffered for his country, and who now in his old age comes for and needs his pension that disability which he has. Every applicant is eventually sent before an examining board. If the disabilities are clearly reported as the result of that examination, the way is open to act intelligently regarding the applicant. But frequently the applicant does not know how to describe his troubles. It is no more than right to help him out. The board does not always do so, not that it is unwilling, but because the examiners perhaps think that if they do so they will be going beyond the requirements. But I am sure an honest description of the actual condition of an applicant, given in a fair way, so far as the old soldier is concerned, is just what is desired.

DR. CASE, of New York:—I am an expert examining surgeon and have attended meetings of United States Pension Examining Surgeons and of medical societies, when this subject was discussed but I must say I never have heard such expressions of enthusiasm in regard to the reflex disturbances attending nasal disorders as I have listened to today. I do not want to let this subject go by without challenging somewhat some statements that have been made here. Naturally I would be an enthusiast on reflex nasal disturbances; but when it is stated that a person has asthma or hay fever from nasal obstructions pure and simple, I think it is not borne out by statistics. I not only speak from observation of twelve or thirteen years in rhinological work, but from an experience of seven or eight years as a general practitioner. I have seen a great many of these cases, and I believe it takes something more to produce asthma than mere nasal obstruction. There must be some kind of diathesis; that is to say, there must be a primary neuropathic condition of the system before you get these reflex disturbances. In the hundreds of cases of nasal obstruction from deviations of the septum, hypertrophies, spurs, etc., seen by specialists only a small percentage have asthma as a symptom. That is my experience. If an old soldier comes to you complaining of trouble in the nose, catarrh so-called, and gives a history of asthma, and shows nasal obstruction, I think we

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should look to the liver, the stomach, rheumatic diathesis, etc., before we give an opinion as to the probable origin of the asthma. I believe that the nose and naso-pharynx are important organs but statistics will bear me out when I say that less the 50 per cent., perhaps less than 40 per cent., of cases of nasal obstruction are followed by asthma. I have always looked upon nasal stenosis as very important in the etiology of diseases of the ear. Perhaps 75 or 80 per cent. of all cases of deafness depend upon some obstruction in the naso-pharynx. In all pathological conditions of the lower air passages and ears, we should always remember that the possible exciting cause may be in the nose.

I do not know that I can say any more in regard to the subject. I made these remarks in order to bring the other phase of the subject properly before the meeting. I was very much interested in the paper and discussion and I should very much like to hear from the general practitioner as to his experience in this line of cases.

DR. SHARRER, of Indiana:—I do not like to let this paper pass from consideration without at least thanking Dr. Potter for the able manner in which he has discussed his subject.

One point he made in the first part of his paper I do not wholly agree with. He said that these old soldiers would come to us with a nasal obstruction that they had had for years, and would go on with that nasal obstruction for years more rather than to go to a specialist and be freed from it. What I think he intended to say was that if they were made aware of the condition and he stated to them that it could be treated in an easy manner then they probably would not accept the statement or follow the treatment. But these men come to you for examination, and give you a list of their troubles sometimes as long as your arm. I remember several cases presented for examination where the applicant never knew until that time that he had a nasal obstruction. In all probability his doctor is treating him for this same asthma referred to by Dr. Potter, and which I believe may produce the whole trouble. I am not a specialist, but I believe that very annoying and complicated conditions may arise from nothing more serious than these nasal obstructions.

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I would also like to know of Dr. Potter whether I understood him correctly to say that he did not believe there was any foundation for the fact that there was no destruction, ulceration or necrosis due to catarrh. At that time he was speaking wholly, I think, of moist catarrh. I may be wrong, and if I am I should like to be enlightened, but it seems to me I have seen cases of dry nasal catarrh in which there has been destruction of membrane, and even possibly a necrosis. I ask for information whether or not that is possible. I think he said dry catarrh gave rise to neurosis. But I think if you trace it down closely you may find neurosis may be the cause of necrosis. I think we can trace that out to such an extent that we may find destroyed septums and necrosed tissue possibly due primarily to catarrh.

In Indiana we have a great many diseased soldiers with that awful disease called dyspepsia and when they give their description, for which I always give them time, you can trace many a case of so-called dyspepsia back to catarrh. The fact is that a man gets up in the morning with a bad taste in his mouth, hawks and spits, and finally raises a collection of stringy or slimy mucus which may extend even to the stomach and is only a continuation of a nasal catarrh, after which he feels a little better. But his appetite has been gone for years. He is emaciated and the picture of distress, and I believe as a result of catarrh.

As I said, I am not a specialist in nasal troubles, but this paper was very interesting to me, and I have been interested in the discussion of it. I feel that we should all interest ourselves in these cases, and if what I have said has only served to disclose my ignorance, no doubt I shall go home the better for it because it will help me to look more carefully into these cases in the future. If others of you are benefited in the same way it will be a benefit to the organization. I thank Dr. Potter, for his able paper. (Applause.)

Dr. Potter, of New York, (in concluding): — The criticisms of my contribution have been so generous that very little remains for me to say in reply. It is readily understood, of course, that in a cursory presentation of the subject dealt with, which becomes necessary on an occasion like the present when time must be economized and much ground

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covered, there will be found imperfections and a want of that minute detail which a specialist in diseases of the respiratory tract reasonably might be expected to present or cover. My aim was to accentuate in a practical way a few of the important features of those diseases of the breathing organs that we, as pension examiners, are dealing with almost constantly, and must diagnosticate and rate with intelligence.

My friend from Elmira, Dr. Case, challenged the statement that asthma is first a neurosis, afterward in some instances to become engrafted upon systemic conditions of other significance. Nevertheless, with all respect to his judgment, I feel sure when he reads the full text of this paper, which I shall esteem it a compliment for him to do, that he will find we are not far apart in opinion. By no means do I desire to be understood as affirming that every person suffering from nasal obstruction has asthma, but I do asseverate that a large proportion of asthmatics upon examination present evidence of nasal disease in some form. Being reminded by the chair that time is fleeting, it only remains for me to thank you, gentlemen, for the kind reception you have accorded my paper.

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Tropical Abscess of the Liver.*

BY

E. F. ROBINSON, M. D.,

KANSAS CITY, MO.

AS the extension of our territorial borders has presented new problems for our consideration as citizens, so the service and residence of our army in the tropics has furnished new questions for our solution as physicians. Disease kills or incapacitates far oftener than bullets in any warfare, but especially has this been true in our recent campaigns in the Orient. The constant return to the United States of scores of invalided soldiers has recently awakened a widespread interest in tropical diseases. None is more likely to be brought intimately to your attention, as pension examining surgeons, than abscess of the liver. Its relation to dysentery is known and the frequent development of liver abscess late in the course of this disease explains its appearance so often in the United States.

From the earliest times dysentery has been the scourge of armies, but in our campaign in the Philippines we have had added to the malevolent influences of massing great bodies of men together, the presence of an endemic disease. The records of 16,210 patients treated at the First Reserve Hospital in Manila for one year—March 1st, 1899-1900, were carefully examined by the writer and it was found that dysentery and diarrhea were the cause of more than one-fifth of the sickness in our army. In this year there were treated at this hospital alone 2251 cases diarrhea and 1391 of pronounced dysentery. Dysentery and diarrhea followed directly the course of the rainy season. During July and August the sick report was crowded with these cases. Often whole companies would be stricken as with an epidemic. The sudden chilling and exposure of the first rains

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made the number of cases during the month of June more than three times as great as that of any other month. With the American in the tropics, dysentery is always present, and with it often abscess of the liver. The conditions which favor the development of the one make more evident the existence of the other.

Numerous statistics demonstrate this fact. In 3680 dysentery autopsies made in various tropical countries and reported by Manson, 21 per cent. showed abscess of the liver. The exact number of cases among our own troops can not be definitely stated, but the prevalence of the disease and its intimate relation to amebic dysentery is well shown by the examination of the records of ninety-six dysentery autopsies performed at the First Reserve Hospital, Manila, during the year 1899. It was my good fortune to have been present at a majority of these autopsies although prevented from taking an active part by the surgical rules of the hospital. Abscess of the liver was present in twelve cases, over 12 per cent. While this number is a small one on which to base a statistical opinion, yet it gives very nearly the correct estimate of the percentage of liver abscesses developing in cases of chronic tropical dysentery among Europeans. The native population in the Philippines rarely develop this disease, although dysentery is common among them. Not a single case of liver abscess was seen among the natives in my own experience in the islands, and I am informed by well-educated Spanish and Philippino physicians that to them the disease was almost unknown. But unfortunately our statistics of autopsies upon the natives are very meagre.

The life led by Europeans in the tropics doubtless explains the frequency of liver abscess. Overeating and overdrinking, together with lack of exercise, favor hepatic engorgement, and the sudden chilling and exposure incident to the first few months of residence furnishes the exciting cause in the development of an acute amebic dysentery.

Although dysentery is without doubt a cause of tropical abscess, the part played by the ameba coli in its development is as yet undetermined. Whether it was a cause or a result in our own cases we have no evidence to offer. All were of the amebic type of dysentery. The organism was

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either found in the stools or the pathological picture was so typical that search was not made for it. From the pus of the abscess, or the abscess wall itself, there is record of the ameba in only five cases. This should not however, lead to the conclusion that the organism had not been present in the remainder, for most of these were of long standing, with great destruction of liver substances, and a sufficiently persistent search was not made in every case.

Only one case of liver abscess was not dysenteric, but was apparently a multiple idiopathic abscess. There was no history of dysentery or diarrhea, nor any post mortem evidence of previous amebic infection, and the organism could not be obtained from the liver pus.

The length of time necessary for the development of liver abscess after the dysenteric attack varies greatly. No definite time, or "period of incubation" so to speak, can be given. In several cases symptoms referable to the liver were present almost from the outset of the disease, while in others an interval as great as two years intervened between the last attack of acute dysentery and marked symptoms of liver abscess. However in the majority of cases, dysentery had existed several months. Previous wasting disease, as malaria or typhoid, did not seem to predispose to liver abscess. In fact many of the cases occurred in men strong and robust, most of whom had never before been ill. The chronic alcoholic, however, seemed particularly susceptible.

The severity of the initial attack of acute dysentery also seemed to materially increase the chances of liver infection.

Of the fourteen cases on our records, five were single and nine were multiple abscesses. As Manson very aptly remarks: "Whether the resulting abscess be single or multiple is more or less a matter of accident. If the weakened liver is efficiently inoculated at one point only, there will be only one abscess; if at many points, then there is multiple abscess." The right lobe was most commonly affected. In only two instances was the left involved.

In the diagnosis of liver abscess, symptoms, while usually only suggestive, are often of very great value.

Pain of a sharp stabbing character in the right side, radiating upward into the right shoulder, and usually localized

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beneath the scapula is a common symptom. Added to this is an irregular temperature which later tends to become hectic, and early a rapid pulse marks the beginning of septic infection. Persistent pain over the region of the whole liver is usually present, with a point of local tenderness just below the margin of the ribs, in the anterior axillary line.

Local signs of abscess formation (redness and œdema, with bulging and increase in the width of the interspaces of the right side) generally do not appear until late in the course of the disease, depending upon the distance of the abscess from the surface. The great increase in the area of liver dullness not only above and below, but particularly to the left of the median line, was found in all our cases.

Involvement of the diaphragm is evidenced by persistent cough with increased pain on deep inspiration. This may be an early and most marked symptom. Extension of infection to the pleura by continuity or by rupture of the abscess, not infrequently occurs, causing a septic pleurisy or empyema. Involvement of the lung may thus result, and occasionally spontaneous evacuation of the abscess has occurred through rupture into a bronchus. Death, however, from a septic pneumonia is by far more common. Two of our autopsies showed this condition, and it was present in two operative cases.. A localized peritonitis is present in most cases of long duration. Rigidity of the right rectus muscle, however, is usually present, even before the extension of the infection to the peritoneum, and is to be noted early.

As the case develops, great emaciation and an anemic jaundice are apparently commensurate with the destruction of liver substance. The word anemic is applied to this jaundice to indicate a peculiar "dilated," faded, almost dusky, yellow color of the skin, common in these cases. A hectic temperature, a rapid, running pulse, with the early development of typhoid symptoms, are in proportion to the amount of pus present; for there seems to be no tendency to limit absorption in abscess of the liver. Sordes soon collects on the teeth and lips, and mental hebetude develops early. The pulse at first rapid, is now running, often being out of

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all proportion to the temperature. It may remain 140 to 160, or even higher, for weeks just before death. Constipation is the rule, with offensive, gray-colored stools, but diarrhea is common late in the disease. A leucocytosis is generally present, but is of little value in the diagnosis as it is very often associated with localized peritonitis, or involvement of the mesenteric glands.

While these local and general symptoms are most suggestive, an absolute diagnosis can be made only by aspiration and the detection of pus. Fortunately this process is attended with but little danger of injuring the gall-bladder, or the large vessels, and, with strict asepsis, the operation is entirely justifiable as a means of differential diagnosis. Not an untoward complication resulted in twenty-two cases aspirated by the writer although in each case multiple punctures were made before the presence of an abscess was discovered or excluded.

In our cases a long needle of goodly calibre was used, so that the thickened pus might be drawn through it. A general anesthetic was given and the needle introduced in the mid-axillary line in the eighth interspace and passed in five or six different directions to its full extent. If this failed to detect pus additional punctures were made both in the right and left lobes; for very often a liver abscess may not be detected by the ordinary puncture in the eighth interspace. This condition was present in one of our cases, and it was not until additional punctures had been made near the median line below the ribs that an abscess was discovered in the left lobe.

In order to determine the extent of liver accessible to aspiration from this point the writer made a series of liver punctures with long needles, post mortem. The needles were left in situ and dissections carried down through the liver substance, when it was found that not one-half of the organ was accessible from the eighth interspace. In one case an echinococcic cyst the size of a small orange lay in the posterior inferior portion of the right lobe toward the median line and entirely escaped detection.

From these facts we were led to the conclusion that additional punctures other than in the eighth interspace must

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be made before an abscess of the liver can be excluded in the diagnosis.

The presence of pus once established, operation is imperative. Personally I have operated on six cases. Four of these were multiple abscesses in which nearly the whole liver substance was destroyed; two were large single abscesses.

Recovery resulted in only two cases; one a large single abscess, the other a double abscess in which the diagnosis was fortunately made comparatively early.

The reason for the high mortality after operation for liver abscess lies chiefly in the fact that so great an amount of liver substance is already destroyed, or the resulting septicemia is of so pernicious a type, that the vitality of the patient is completely exhausted before he is seen by the surgeon.

Hence early diagnosis and operation are particularly important in this disease. It is especially in these early cases too, that symptoms are vague. There may be no redness, swelling or local tenderness, and the only symptoms suggestive of liver abscess are often vague pain referred indefinitely to the region of the liver, and the constitutional symptoms of pus absorption. In such cases resort should be had at once to aspiration. We have shown that this procedure is attended with a minimum amount of risk, is efficient and hence justifiable.

Often the local and general symptoms of liver abscess may develop from a patch of necrosis without the formation of pus. Here it is evident aspiration would fail to detect the infected area in the early course of the disease. Personally I have seen two such cases at autopsy in which an abscess would have undoubtedly developed had life been prolonged.

Hence if the symptoms persist, resort again should be had to the aspirating needle, after a period of from 10 to 14 days. (In two of my own cases pus was detected at a second trial.)

To recapitulate just for a moment. A patient with a history of dysentery in the past two years who has had irregular attacks of pain over the region of an enlarged liver, and these attacks have been attended with an irregular temperature, prostration, and symptoms of mal-digestion,—such a

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patient should at once be aspirated, even if there are no local signs of pus. If the symptoms persist after an interval of two weeks the procedure should be repeated. This course will surely result in the early detection of many liver abscesses, and their prompt operation will save many lives.

In reference to the surgical technique—if there is evidence of pointing, the abscess should of course be opened at that place where fluctuation is manifest. This will usually be along the costal margin, external to the rectus muscle, or in the median line, just below the ensiform cartilage.

However, in the vast majority of cases, even late in the course of the disease, there are no local signs of pus that will aid the surgeon in the selection of the site for operation. In these cases, if the liver is greatly enlarged, and extends much below the border of the ribs, incision may be made transversely about one inch below and parallel to the costal border. The location of the abscess as indicated by the aspirating needle, will of course influence the decision. But in by far the greater number of cases, it is best to excise a portion of a rib and drain from the side, as there is thus less danger of additional infection and greater facility in gaining access to the abscess cavity.

Even in the most extensive liver abscesses the lower anterior border of the liver is often not involved, the infectious process being confined to the substance of the organ. In many instances the abscess can be reached only with the greatest difficulty by the incision below the costal margin. By excising a portion of the eighth or ninth rib in the mid-axillary line there is almost no danger of infection, but little shock and the freest possible drainage in the most dependent position.

The aspirating needle, when once it has encountered the abscess cavity, should not be removed, but left in situ, as it is a most valuable guide, and when controlled by an assistant, interferes but little with the operation. Along this may be passed a grooved director, closed hemostat or other blunt instrument or the finger, and the abscess thus opened. The writer much prefers the finger as the abscess can thus be partially at least explored and patches of necrosis often detected.

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On account of free hemorrhage in opening a deep-seated abscess the thermocautery may be used, but this is rarely necessary. Severe hemorrhage, if it occurs, can be controlled by packing. Usually it is best simply to drain the abscess at operation and to use no irrigation for forty-eight hours, owing to the weakened condition of the patient and the danger of infecting the pleura or peritoneum.

If the liver is adherent, and the peritoneum or pleura thus protected by adhesions, the abscess may be opened at once. If no adhesions exist and there is danger of infecting either, a delay of forty-eight hours is obviously wise. The instruction to "stitch the capsule of the liver to the margin of the wound" is more didactic than practical. Rarely, if ever, can this be done, as the liver capsule, particularly that of an inflamed liver—is so friable that no stitches will hold, and but little protection would be afforded if they did. Simply packing the wound with iodoform gauze and waiting forty-eight hours will in most cases accomplish the desired result.

While this procedure will usually operate favorably in incisions along the costal margin, it may signally fail as a means of protecting the pleura, particularly if a large effusion exists. Here Binnie's suggestion to stitch the diaphragm with its attached liver, to the parietal pleura may be tried. Two or three stitches, supported by a gauze pack, may be of service. But if this should fail to completely wall off the cavity, the infected pleura and liver abscess should each be drained separately. This was necessary in one of my cases, that of a double liver abscess and empyema, which recovered. Gauze will not drain liver pus. Large, preferably double, drainage tubes of non-collapsable rubber should be used. Normal salt solution, sterile water or weak antiseptic solutions are best for irrigation, as absorption is very great and strong antiseptics are dangerous. Under daily irrigation with such solutions the discharge will completely disappear in a surprisingly short time—a week or ten days, even for a large abscess. Free stimulation and most nourishing foods are essential in the after-treatment. There are few sequelæ to tropical abscess of the liver. Pleurisy is the most common, while nephritis may rarely occur. For-

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tunately, if a diagnosis can be made, and the operation undertaken early, recovery is rapid and complete, and the chance of untoward after-effects is small. A list of operative cases is appended.

Case I.

Double, with empyema—operation—recovery.

Major H. R. A., artillery corps, U. S. A., 58 years old, 37 years service. Tropical service, Cuba and Porto Rico, '98.

Family and past history have no bearing on the case, with the possible exception of an attack of typhoid fever in 1890 and a history of occasional attacks of malarial fever since that date.

In Cuba in 1898 contracted a rather severe case of dysentery which lasted some months, and was accompanied by marked emaciation and anemia. Amebæ found in great numbers. Recovery from the attack was apparently complete, but after about one year, there was a recurrence which lasted for more than a month. Since this attack of dysentery his medical history shows six admissions for sick report with diagnosis relating to gastro-intestinal trouble.

Present illness dates from Oct. 29, 1902, fully two years after last attack of dysentery and nearly four years after his service in the tropics. It began with general malaise, headache, loss of appetite and nausea, apparently made worse by eating. There was early slight cough and severe pain referred to region of right scapula. General condition at this time was good, examination of skin, mucous membranes and chest negative. Abdomen found somewhat distended but no rigidity. Bowels regular, stools normal, urine negative, blood count gave slight lencocytosis, pulse regular, and of good quality.

These symptoms continued with varying severity up to Nov. 1st, when he developed characteristic pain of pleurisy in right chest, but examination on Nov. 3rd was negative. Temp. varied between 98 and 100 rising to 102 once or twice. On Nov. 5th, examination showed effusion in right chest, to a point somewhat above angle of scapula. There was no redness, swelling or œdema, and the liver while slightly tender to deep percussion, showed very little if any enlargement. The right rectus muscle, however, was quite

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rigid, and deep breathing was impossible on account of the pleuritic pain.

Probable Diagnosis: Liver abscess and pleurisy by extension.

In order to clear up the diagnosis and locate the liver abscess if possible, patient was placed under the influence of ether, Nov. 5th, at 6 P. M., a systematic search made with a long aspirating needle, through the eighth interspace, and in the mid-axillary line, thrusting the needle in several directions through one skin puncture. Not until the ninth trial was pus finally located. This was of a yellow color, but slightly tinged with red, and was found upward and backward, evidently in the dome of the right lobe of the liver. The pleural effusion was evident.

An incision 4 inches long was made in the mid-axillary line and 1½ inches of the eighth rib excised. The pleura was found full of a sero-purulent fluid. As there were no adhesions between the diaphragm and the parietal pleura, the operation was stopped at this stage and wound packed with iodoform gauze. By this means it was hoped to secure adhesions which would make the opening of the liver abscess at a later stage comparatively safe. Patient reacted well.

Nov. 8th, 56 hours later, ether was again given and the gauze packing removed. In doing this a large amount of serous fluid was evacuated from the pleura, and the very imperfect adhesions were of necessity broken down.

It was thus seen at once that opening the liver abscess through the present wound was out of the question, and it was decided to attempt to drain the abscess through a lower opening.

The upper wound was packed and protected with gauze and one inch of the tenth rib excised. With a blunt instrument and the finger the abscess was opened about 2½ to 3 inches from the liver surface. Hemorrhage was at first rather severe but not alarming. Only a small amount of pus and broken-down liver tissue was at first evacuated. Only when the finger was thrust upward and backward, the main abscess was opened. It was thus seen that two distinct abscesses existed. The first and most recent was really a necrotic spot in the liver substance, and contained about two

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drachms of pus in its center. The second or main abscess, as nearly as could be determined, was about the size of an orange, and lay in the upper and back part of the right lobe. A large size drainage tube was placed in the lower wound. The wound in the pleura was packed and drained temporarily simply by gauze. This was replaced after 48 hours also by a large rubber tube. Patient suffered considerable shock and required infusion of several pints of salt solution, and the limit of stimulation. For the first 3 days, his pulse varied between 120 and 134, with a temperature varying from 100.4 to 102.2. Both steadily improved and he made an uneventful recovery.

Both wounds drained well. On the 14th day, the rubber tube was removed. The upper pleural wound was drained until Dec. 10th, when the wound was allowed to heal. Two months after operation, patient had gained 20 lbs., and was sent south for the remainder of the winter. At this date (April 10th) he has entirely recovered and without a sign of recurrence.

Case II.

April 20, 1900, private T. S., Co. F., 42d U. S. V., was seen. He had never been sick since childhood until six weeks before, when he was attacked with diarrhea. The symptoms of dysentery rapidly developed, and on his admission, April 25, he was passing from five to twelve bloody mucous stools a day. His temperature was 101, tongue dry, brown and cracked, pulse 140 and thready. The spleen was slightly enlarged, and the abdomen tympanitic and tender on pressure. A point of great tenderness was evident just below the ribs over the region of the gall-bladder. The liver extended from the fourth interspace to the level of the umbilicus, one and one half inches below the costal margin in the right mammillary line, and about three inches to the left of the median line. He was in a condition of mental hebetude, and complained of little pain except at bowel movements. The blood count revealed a leucocytosis of 18,000. Widal's reaction was negative and the plasmodium malariæ was not found. Under ether, an aspirating needle was inserted through the eighth interspace and pus was found on the first puncture. An incision one and one half

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inches long was made over the eighth rib, one inch of the rib excised and the abscess at once opened and drained. More than one pint of fetid liver pus escaped. The abscess cavity was not irrigated until the second day, and then daily irrigations of sterile water were begun. The pus had completely disappeared on the tenth day and the man was out of bed. Recovery was complete. Amebæ were found in the abscess cavity.

Case III.

Sergeant J. D., Troop E, 11th Cav., for many months had had chronic dysentery. On admission, Nov. 21, 1899, he was having from four to ten stools daily, his temperature was hectic, pulse 138 and weak, and he was very weak and greatly emaciated. For several weeks he had had marked tenderness over the region of the gall-bladder. This had greatly increased. Intermittent hiccough and a persistent dry cough were troublesome, and suggested involvement of the diaphragm. The liver extended one inch below the costal margin in the nipple line, and there was marked bulging at this point and marked œdema of the whole right side.

No aspiration was made in this case, as pus was evident—either an abscess or a suppurating gall-bladder. An incision was made one inch below the ribs in the nipple line, down to the peritoneum. This was found adherent, and so the abscess, very large, "big as your head," was at once evacuated. The cavity was irrigated with normal salt solution and three drainage tubes inserted. The pulse was so weak during the operation that three pints of normal salt solution were given intravenously and one pint by hypodermoclysis. Despite this and the freest stimulation the patient steadily grew worse, and died five days later. The autopsy showed multiple amebic abscesses, which had destroyed nearly the whole liver substance.

Case IV.

Private Wm. H. H., Co. K., 13th U. S. Inf., had never been ill until Aug. 4th, 1899, when he developed a severe case of acute dysentery. From the onset his temperature was unusually high—103 to 105. The discharges were of the characteristic mucus and blood, and so frequent that he

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was constantly on the bedpan—more than forty movements in twenty-four hours. Almost from the first he complained of pain over the region of the liver. The organ rapidly enlarged, and by the twelfth day the whole right side was œdematous. Aspiration revealed the presence of pus and incision was made in the mid-axillary line, excising a portion of the eighth rib. Only a small amount of pus was evacuated. The patient never rallied from the operation, and died on the thirteenth day. The autopsy showed one small abscess with several necrotic patches throughout the substance of the liver.

Case V.

Case 10,741.—G. M. W., a clerk, was seen March 7, 1900. There was no history of dysentery or diarrhea. The patient had been in the Orient five months, and in fair health until about four weeks before, when he rapidly lost weight without assignable cause. On admission to the hospital, March 7, he was much emaciated and of a peculiar dusky, jaundiced color. His temperature was subnormal and his pulse rapid and feeble. Pain over the liver was constant, with the point of greatest tenderness one inch below the costal margin in the mammillary line. The organ was very much enlarged, extending four finger breadths below the ribs. Under ether the aspirating needle revealed pus. An incision two and one half inches long was made below the costal border in the right nipple line. The liver was found adherent to the parietal peritoneum. On attempting to open the abscess such free hemorrhage occurred that the wound was packed with iodoform gauze and partially closed with silkworm gut sutures. Further operative procedure was delayed forty-eight hours, when it was intended to open the abscess with the Paquelin cautery. However, on separating the capsule from the diaphragm, about one pint was evacuated. A drainage of double tubing was instituted, and the patient left the table in a very weak condition and died forty-eight hours later. The autopsy showed multiple abscesses of the liver involving nearly its whole structure. They varied in size from one to five inches in diameter and contained peculiarly fetid pus. There was no previous history or evidence of dysentery, nor could the ameba be found. Apparently the case was one of

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multiple liver abscess following general hepatitis. The mesenteric glands were much enlarged and the spleen was septic.

Case VI.

Private C. F. B., Co. I, 4th U. S. Inf., gave a history of chronic dysentery of several months standing, but on the date of admission considered himself cured of that disease. His present illness began so insidiously that he could not state the time of its onset. During the preceding month he had lost greatly in weight, and suffered from a constant steady pain in the epigastrium. On admission, the temperature was subnormal and his pulse rapid and feeble, with a dry brown tongue, and mental hebetude, and his skin a dusky jaundiced color. The liver was much enlarged, extending fully three inches to the left of the median line and one and one half inches below the ribs. Aspiration at the eighth interspace, in five or six directions, failed to detect pus, so the needle was introduced into the left lobe from a point just to the right of the median line, one half inch below the costal margin. Here puncture was successful and an incision was made down to the liver. The capsule and parietal peritoneum were adherent and a large abscess was opened and drained, with no irrigation. The patient rallied from the operation, but died on the fifth day. The autopsy revealed a large single abscess occupying the whole left lobe. It had perforated the diaphragm, and opening up the pleura had set up a septic pneumonia. Healed amebic ulcers were found in the intestines, but the ameba coli could not be distinguished.

Discussion.

Dr. Sarles, of Wisconsin:—Have you any record of the use of any previous treatment for enriching the blood to prevent hemorrhage?

Dr. Robinson:—You mean calcium chloride, etc.?

Dr. Sarles:—Yes, if they were used and records kept.

Dr. Robinson:—No, for several reasons, that was not used. In the first place, when you detect the liver abscess the absorption is so great and has been continued so long

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that the condition of the patient is too serious to warrant any delay. Another point is that we did not find it necessary; we found no great tendency to parenchymatous hemorrhage in these operations. When jaundice occurs, the patient is greatly exhausted and emaciated. The jaundice itself, causing blood changes, is not particularly great; the liver has in a measure ceased to make bile.

DR. SHARRER, of Indiana:—I believe Dr. Robinson said that once in a while there was a recovery. I was wondering if there were any other means under his observation by which any of those abscesses of liver were brought to recovery other than by rupture.

DR. ROBINSON:—I have never known a case of recovery where there was spontaneous rupture, even in a case of rupture through a bronchus. Dr. Manson mentions the recovery of one or two cases, but generally if the case is one where the rupture will occur spontaneously the patient is so exhausted that it only means a certain number of days or weeks until death occurs. It is a surgical condition.

DR. EISENBERG, of Pennsylvania:—I would like to ask the Doctor how many of his cases were cured by aspiration alone.

DR. ROBINSON:—I do not know of any case that was cured by aspiration, nor did we ever make an attempt to cure by aspiration. That was only to locate the affected area.

The reason I brought this paper before you as pension examining surgeons was this: It is a condition that will be more apt to come before you in the future than it has been in the past. I heard only yesterday, through the Surgeon General's Office, from my friend, Dr. Kendall, who is at the general hospital at the Presidio, San Francisco, that in the last month he had seen four abscesses of the liver in returning soldiers.

Another point I want to emphasize is this: A man who has had a previous attack of dysentery in the last two years (particularly of amebic dysentery), who complains of pain over the region of the liver, and especially if the

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liver be enlarged, that man most probably has an abscess of the liver. This fact has been brought to my attention in the last six months in the case of an officer who returned from Cuba two years ago. He had had a recurrence of dysentery, complained of vague pains in the region of the liver, reminding his doctors in a measure of gall-stones. His pain was increased by deep respiration and he had irregular attacks of mal-digestion. He would be prostrated, with a weak pulse, and irregular temperature, and an aggravation of all his symptoms for a week or more at a time. That man had not been in Cuba for two years, and yet at the time of operation he was found to have pus in the right lobe of the liver. He has had two abscesses. The infection had extended directly to the diaphragmatic pleura, causing pleurisy or empyema in addition. Let me run over these symptoms again.

"A patient with a history of dysentery in the past two years who has had irregular attacks of pain over the region of an enlarged liver, and these attacks have been attended with an irregular temperature, prostration and symptoms of mal-digestion—such a patient should at once be aspirated, even if there are no local signs of pus." Of the fourteen cases that I saw six were considered operable at the time. Of those cases I never saw one except late in the course of the disease, in which there was any redness, swelling or œdema. The disease starts deep in the liver, tends to spread towards the surface along the ribs and side, rarely showing early signs of inflammation. These are the points I wish to call to your attention, because I believe it is a condition that in the near future is going to be brought home most intimately to the profession who will have to deal with soldiers who have seen service in the tropics. Twenty per cent. of cases noted in our hospital sick report were cases of dysentery. That is the cause of the disease. You know that in the Civil War amebic dysentery was common although not as frequently seen as in our campaign in the tropics. Undoubtedly many of you have seen such cases then. You are likely to have this condition brought intimately to your attention in the future. Early operation will of course prevent most of the sequelæ of abscess of the

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liver. But when the disease has destroyed a certain amount of the liver tissue it is bound to leave a considerable degree of invalidism, especially if the trouble has been long continued. Pus absorption will show itself possibly in other ways, particularly through the kidney. A thickened pleura with adhesions not infrequently results.

Gentlemen, I thank you for your interest in my paper. (Applause.)

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The Etiology of Some Pensioned Disabilities Measured by Modern Pathology.

BY

W. T. SARLES, M. D.,

SPARTA, WIS.

THE object of this paper is to take a cursory survey of some pensioned disabilities measured by modern pathology, and to see wherein we have been enlightened or not, as to the etiology and symptomatology of these diseases, and their resulting disabilities, after a quarter of a century of unexampled scientific advancement in medicine and surgery.

Previous to 1881, the bacteriological origin of diseases was unknown. In that year Ogston announced his important discovery, followed closely by that of Rosenbach, which revolutionized the study of acute suppuration. This was followed in 1882 by Koch's announcement of the true cause of tuberculosis, and later followed Lister's great discovery of asepsis and antisepsis, until today, through the knowledge gained by the great army of medical men employed in original research, we are able to interpret as symptoms only, a vast category of disabilities the clinicians formerly classified as distinct individual diseases. For example, jaundice, dropsy, vertigo and the like, were formerly treated as individual diseases, and are pensioned as such with appropriate ratings as to the degree of disability that objectively appears to exist, but their etiology is very variable, and accordingly each case must be a law unto itself, and subject wholly to the action of the Bureau, who alone have all the evidence in a given case. For instance, in a case of jaundice, one board of surgeons may conclude the cause of disability to be the result of biliary obstruction, while another may give toxæmia as the cause, in their opinion. Again, in the case

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of dropsy, one board may find a diseased heart, another pulmonary disease, and still another a diseased liver or kidney, in their opinion the cause of the existing œdema or dropsy. Likewise in the cases of vertigo, whether due to sunstroke, neurasthenia, lithæmia, gastric, heart, or arterial disease, or to eye-strain or Meniere's disease, will depend upon the predominant objective symptoms of the above disabilities most plainly evident to the respective examining boards. There must of necessity be much difference of opinion as to the etiology of such disabilities, and modern medicine has not sufficiently enlightened us to make a distinction in every case without differences of opinion.

Again, such disabilities as are pensioned under the head of chronic diarrhœa, rheumatism and asthma, vary in each individual case as to their etiology and pathology, and while modern medicine has taught us much as to our understanding of the causes and effects, it has not added to our practical knowledge from the standpoint of objective symptomatology to any appreciable extent. For example, the objective symptoms of a claimant with chronic diarrhœa will not alone tell us if it be due to tuberculization of the intestinal tract in its earlier stages, or to chronic catarrhal enteritis alone. Dr. Austin Flint, in his "Practice of Medicine" of 1866, recognized tuberculosis as a cause of much of the chronic diarrhœa of that time, and gives a very accurate clinical history of the objective symptoms of the disease. He did not then know that tubercular bacilli, which we now have the privilege of examining, were the cause of tuberculosis, but he did know, from a clinical standpoint, that such a condition as chronic diarrhœa, due to tuberculosis, existed. Neither then, nor now, are we able to tell from any knowledge since gained, when a case of chronic catarrhal enteritis becomes infected by tuberculosis, but from our combined clinical and pathological experiences, we know such tuberculization to have taken place in many such cases. The subject of asthma is also a source of much confusion. A claimant is pensioned for disability caused by asthma. The etiology, while generally considered neurotic and the pathology unsettled, are both indefinitely determined in most cases. Its clinical manifestations may be "bronchial," "cardiac," "hay," "renal,"

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or "thymic." Modern pathology has given us no more light upon this subject up to the present time.

In the condition of rheumatism, certain muscles or joints may become involved, followed by endocardial invasion, with resulting atheroma, embolism, paralysis, and death of claimant. Though after a period of decades, this sudden and unexpected termination of life may be as truly due to apparent cause and effect as if occurring during the claimant's actual service of a few years only. Such cases, though exceptions to the general rule, are often convincingly proven as to etiology and pathology, and are entitled to consideration by the examining surgeon and Bureau. Likewise a malarial or typhoid infection has occurred in the service, and claimant has since suffered "spells" of infection, manifest by a febrile state of a few days duration, preceded by chills, and each time lasting longer than before, until a suppurative gall-bladder or calculi are found to exist, or an appendicitis, either of which might prove fatal without surgical interference.

Recent experiments relative to the workings of the colon bacillus, whether in the typhoid or other states of infection, have shown conclusively the cause and effect of these pathological states, and are entitled to recognition in the adjustment of claims, when disability therefrom is sufficiently proven.

The Widal test for typhoid fever and other tests of blood and secretions, as well as the macroscopical and microscopical evidences of disease, known only to modern medicine, while being of value in determining the existence of a given disease, are comparatively valueless in determining the degree of disability resulting from such diseases or their sequelæ. Modern instruments of precision, however, often aid materially in determining the degree of disability from objective symptoms thereby made manifest. There is no question of the accuracy and expertness with which the clinical observer of former times classified objective symptoms and came to conclusions relative to cause and effect of certain diseases. They were positive in their observations and deductions until their etiology and pathology were discussed, when they became in doubt. A perusal of Flint's

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"Practice of Medicine" of 1866 gives as clear a clinical history of diseases therein discussed as of any writer since that time, and in his conclusions as to etiology and pathology he gets at the true meaning as accurately as was possible at his time, by using the terms "materies morbi" etc., in the place of "bacteriological infection" since discovered.

The classifying of symptoms only, as diseases is still in vogue, and no doubt after another quarter of a century, many of the diseases which we consider established as to nomenclature today, will be considered but the symptoms of the diseases of tomorrow. This change of nomenclature is necessarily confusing to claimant, surgeon, and Bureau.

Not the least in the category of disabilities to call for the closest observation and the most skilful tests of the examining surgeon, are the disabilities enumerated under the head of "diseases of the nervous system," as neurasthenia, nervousness, etc., at present only symptoms. They may mean much, and they may mean but little. Dr. Hugh T. Patrick rightfully says, however,—when looking into the conditions of the nervous system, we are unable to name other than 'nervousness,'—"God knows, the physician does not."—"And yet, if you will stop for a moment, take your fingers from the pulse, and your hand from the scalpel, your eye from the microscope and your thoughts from the microbe, I think that you will agree with me that these trivialities contribute quite as much to human suffering and disappointment as do the infections, inflammations, and neoplasms in the long category of human pathology." Many are the soldiers, broken nervously, who cannot be described by objective symptoms better than in the above language of Dr. Patrick. However, these unfortunate cases, together with a long list of those of idiosyncrasy, must be necessarily reviewed as exceptions, and do not come under the rule of rating for disability from objective symptoms alone. The misfortune to the worthy pensioner of a misnamed disability is unfortunate and difficult to remedy.

It cannot be gainsaid that much difficulty of technical administration of claims, both relative to nomenclature and etiology and pathology of disease, existed in the earlier disposal of pensioned disabilities. Also the rulings of sequelæ,

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applied to every disease, based upon medical opinion, from theoretical knowledge alone as to etiology and pathology, gave the average claimant for pension the advantage over the government and the intent of the law. However, since the Bureau has applied a more rigid system of requirements in examination, holding each case strictly to a technical interpretation of the etiology and objective symptoms of disease, measured by modern pathology, the government has regained the advantage previously lost to the claimant or pensioner.

In conclusion we find, (1) that symptomatology is as accurately defined by former observers as by those of today; (2) that nomenclature changes with the progress of original research, making many of the classified diseases of today the symptoms only, of the diseases of tomorrow; (3) that surgery, pathology and bacteriology have so enlightened "Internal Medicine" that its objective symptoms are much better understood and can be more technically applied in the consideration of most cases of disease and resulting disability.

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Eye and Ear Examinations,

Hints to the General Board Surgeon.

BY

JOSEPH O. STILLSON, M. D.,

INDIANAPOLIS, IND.

IT may be set down as an axiomatic truth that an apology is a very poor introduction. Nevertheless you will judge from the title of my paper, which by the way was assigned to me by our esteemed Secretary, that an explanation at least is in order. The writer remembers once to have written a paper on Tobacco Blindness, which was returned, to him by a leading eye journal, with the remark that the text was too elementary for publication, and that it would have to be re-written and brought up to a more advanced standard before it could be received for publication. The same paper without any change whatever was read a week or so after that at a meeting of general practitioners in a neighboring county, and met with quite a gratifying discussion; it was solicited for publication by two journals and was published by one of them. Numerous letters were afterwards received requesting reprints of that paper. In the process of evolution the refinements of specialism follow the general law, so to speak. We all know the effect of classical music, how it is that there are those to whom the old time melodies no matter how well rendered, are painful to the ear, while others, who appreciate and take delight in these same songs and tunes simply remain bewildered during the execution of the modern classics, and wait for the performer to begin something "after he gets tuned up" and so remain in expectation and disappointment to the end.

It was, I may say, not an easy matter, to promise a paper to this learned body, when Dr. Rider first wrote the writer, for the reason that he was well aware that others far better

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prepared than he, have given this or some similar subject much careful thought, and those who limit their practice to diseases of the eye or ear, or both, must needs waive the considerations due them in this paper, in favor of the paramount idea expressed by the title that such hints as the writer may offer shall follow out the lines indicated in Dr. Rider's letter to him wherein he says: "It seems to me that your paper should be one for the general practitioner, that is, one which from the point of view of the eye and ear man shall give the every day physician, who at the board meeting must do some quasi special work, such simple hints as will enable him to do this work more easily, effectively and accurately. You might refer to the advisability of using the Snellen test types at different distances—20, 15, 10 ft.—to see if the claimant's answers agree among themselves. Then there is the pin hole test which may be used roughly to decide whether a given disability be due to a refractive error which may be corrected, or to lesions deeper in the eye. It might be advisable to discuss the fallacy that the plugging of one ear is an effective diagnostic procedure with claimants who assert a high degree of one-sided deafness, and the inefficiency of the binaural stethoscope in the same class of cases. It seems to me that the general purpose of the paper should be to give the general pension examiner a number of such simple tests in eye and ear work as can be utilized without any costly apparatus or highly specialized knowledge. It might not be unadvisable to look over the eye and ear part of the printed "Instructions to Examining Surgeons" and note whether the directions there given may not profitably be somewhat elaborated and simple means and methods suggested for making more easy and effective such tests as are measurably trustworthy when properly carried out, etc."

If with this apology or explanation we understand ourselves in the beginning, much that may be said in the time allotted may like seed fall on fruitful ground and not be lost, whereas if we are to go into the abstruse matters pertaining to ophthalmology and otology, then the writer greatly fears that his efforts may be found to be in vain. Not that he would be understood as implying that today the majority of modern practitioners are not well equipped and

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amply able to take care of themselves so far as this or any other specialty is concerned in all that implies what we know of the essentials. Far from that; but while we do admit, and are glad to do so, that today postgraduate work has so far advanced the general attainments of our modern general practitioner that he is able to diagnose and treat most any and all conditions, yet, nevertheless, there are points about ophthalmology, and possibly also about otology which will keep these two departments of medicine and surgery, as fields, worthy of the limitation of the best talent, and these specialties will doubtless remain when all others have merged again into the general practice, as the law of evolution is sure to effect with time. For the same reason, namely, that eye and ear affections are hard to diagnose in quite a good many instances, we have the like proposition that here too we find the most prolific sources from which arise attempts at simulation. An ankylosed elbow, a lost leg or arm, the track of a bullet wound, a poorly united fracture of a long bone, these are afflictions and deformities easy to see; but the bare subjective symptom, the simple assertion of an applicant that he cannot see, or that he cannot hear, when the pupil reacts to light in the one case, or when the drum of the ear shows a good cone of light in the other are propositions of a decidedly different nature where your professional opinion is brought in competition with the word and honor of another. And just here, if I might be allowed to digress for a moment, I would like to be placed on record as making one statement which is entirely the result of my limited experience, whatever that may be worth. We all know that in life insurance the benefit of the doubt must always be given to the company. Now while as experts we should be, in fact must be wholly impartial—for what is an expert worth if he is a partisan?—I think that the boards and the department have been very generous and where any variations have occurred it has been my usual observation to find that these variations have been not in favor of the department but in favor of the applicants. I appreciate the fact that we owe a debt of everlasting gratitude to the aged veteran who, having sacrificed his health, risked his life, endured toil and now, suffering, comes to ask his due reward.

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In offering hints to board surgeons the writer will follow out the usual procedure which in his hands he has found to be the most reliable. Instead of beginning an examination with the details laid out in Sec. 100, a, b, c, d, (see printed Instructions) first request the applicant to sign the statement on back of certificate, and after he has signed this, request him to read what he has signed, that he may be sure he has signed nothing but what he understands. Direct him in the usual tone of voice, to read same out loud. If he has reading spectacles direct him to employ the same, if not, by having three or four pairs of ordinary glasses, say a plus 1.00 D., a plus 3.00 D. and a plus 5.00 or 6.00 D., he will make his own selection and proceed to read "I ——— the applicant for original or increase pension hereby consent to be examined," etc. When he reads down to the clause "Signature of Applicant," have placed right along after that a leaf containing Snellen's test letters D—1, etc. He will, as a rule, go on and read into this "remarkable foreshadowing of the future conflict with Spain, etc." before he discovers that he has virtually given his index of refraction and his accommodation for the near point. Now take his near spectacles and examine them and write down the number in his presence. He will at once observe that some note has been made of his failing eyesight, due to age. If he cannot read the certificate nor type No. 1, try the coarser type above the certificate, where it says, "This certificate to be filled in and signed," etc., and this type is to be compared with Sn. 1.50, etc. It is a good rule then to take the vision for distance next, and instead of allowing him to read as he desires from the largest to the smallest letters on the test card, place his distance glasses on and begin with what should represent 20-20 and go back. In this way he will usually, if the case be a refractive one, begin to read at 20-40 or sooner and much higher visual acuity will be found than if the applicant is allowed to read the 20-200 first and so on down. Because the operation of the mind of the applicant will be about like this: He will imagine that he ought to read the very large letters, but when he comes down to those a half inch square he will claim not to recognize them at all if he does not see them distinctly, e. g., to tell a G from a C or tell O

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from Q. He should be urged to try even if he misses, for the tail on Q, the hook on G and the part cut out of C are inessentials. So long as he distinguishes a circle from a square, as for instance tell M or H or X or K from G, C, O, Q, etc., he should be led to understand, that the equivalent of this vision in one eye or both will hold good at different distances, for the scale of letters as laid down in the tables. In this way the test card should be placed at different distances, e. g., 15, 10, 5 feet and the equivalents noted. If he starts out truthfully he will be consistent throughout, but if he gives himself the benefit of the doubt, or falsifies in the beginning he will almost invariably betray himself before he finishes. It is much better for the examiner to point to the letters with a black pointer or pencil, and always from the smaller to the larger instead of leaving him to read ad libitum and from the larger to the smaller. When one eye is claimed to be the sole dependence we then must determine the vision of the faulty eye. Here the pin hole test, or the stenopaic slit will aid in refractive cases. By the former (a simple card with a small hole made with a pin or awl) in cases where a part of the pupil is clear while another part is occupied by spots,—corneal opacities etc., "the applicant, who can best manage the card himself, will be enabled to read in cases where it would be impossible to do so in any other way" (Fuchs, p. 601-2).

For the detection of the simulation of one sided total blindness by the prism test, the writer has employed a prism and a colored glass, sometimes a double prism, and a second double prism a part of which is red. As a rule it is advisable never to let an applicant shut and open either eye alternately. Better use a heavy lens or piece of ground glass for exclusion and make him keep both eyes open all the time or close both at once. In this way his mental operations are separated from the eye tests and by keeping him confused he will oftentimes see, but not know which eye he is using unless there be a real, decided difference between the visual acuity of the two eyes. During this time it is advisable to take accurate note of the pupils, and here we have perhaps after all one of the best if not the best index which comes to the aid of the general practitioner. Time

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will not permit a full discussion of this most important portion of the eye and its relation to health and disease both of the eye itself and the body.

Disorders of motility of the pupil, or dissimilarity of the pupils, either as to size or position (eccentric, etc.), will at once attract the attention of the careful observer. Here we must be familiar with several varieties which can only be mentioned here for lack of time (see Norris and Oliver, p. 866, the Von Welz test), e. g., the Argyll-Robertson's pupil (Ranney, p. 93), the pupil in tabes dorsalis (Noyes, p. 402) and the differential diagnosis between simple myosis, where the pupil is small and reacts both to light and convergence, whereas in the Argyll, we have the pupils small and reacting scarcely any or at all to light and shade but reacting quickly in convergence and accommodation, found in locomotor ataxia or tabes dorsalis, and paresis or the progressive paralysis of the insane, while it is very rare in other diseases (Linnell, p. 73), this pupil as a rule not indicating an impairment of vision.

The Knies's pupil, which is similar to the above (ibidem, p. 76), characterized also by the absence of reaction to light, and followed by loss of reaction in accommodation and convergence, associated with loss of reaction to cutaneous irritation is said to be positively a sign of tabes. "While we must remember that myosis and mydriasis taken alone (ibidem, p. 61) have not such great significance as isolated symptoms, yet taken in connection with other symptoms they are sometimes an index of the nature and location of morbid processes and the different forms of cycloplegia are very suggestive diagnostic indications." Recall the variations in myopia, hysteria, lesions of the pons, atrophy, glaucoma, Wernicke's hemianopic pupillary reaction (Linnell, p. 68), hippus. Anisocoria (Fuchs, p. 307), when not due to a drug of some kind, is always regarded as a pathological condition, since in the normal state, and where the eyes are capable of vision the pupils should be of the same size and symmetrical.

We may say therefore, as a general rule, if there is dissimilarity in the pupils, if the reflex be absent, or very sluggish both to light and accommodation, we may look for some lesion in the eye itself or the optic nerve or at least

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anterior to the higher visual centers, i. e., anterior to the corpora quadrigemina and the nucleus of the third nerve. The presence of a good acting pupil, the association of accommodation and convergence, the isometrical resemblance between the two pupils should discredit to a large extent a claim to absolute blindness, and place the case in the category of refractive anomalies of high degree or amblyopia ex anopsia or some other affection where a physical examination of the eye itself will account for it. Galen described a pupil, known in ophthalmology as the Galenic pupil (Amer. Jour. Ophth., Jan., 1902), which is said to be almost an infallible sign to detect the simulation of hysteria and malingering, and it will hold good where the question is one of any lesion anterior to the optic thalamus.

Various tests with uncolored lenses can be made for simulation, where the eye looks normal, and the pupil reacts properly. These can only be mentioned here for lack of time, e. g., Silex's test (Norris and Oliver, Vol. IV, p. 874) with one very strong lens over the good eye and the bad eye corrected of refractive error; Harlan's test with a strong concave or strong convex lens before the good eye and one of proper or quite weak glass before the bad eye; Jackson's test with two strong cylinders placed at right angles, on the good eye and a correcting lens over suspected eye (ibidem, p. 876). The patient will see with both eyes open quite or nearly as he should, and while he is reading, the operator turns one cylinder which blurs the good eye and he goes on reading with the alleged bad eye.

After having the applicant sign his name to the certificate and do what reading he may be able to do, then the objective examination of the lids and conjunctiva may be taken up. This should be done always systematically, beginning with the canthi, caruncles, lid margins, cul-de-sacs, tear sacs, tarsi and retrotarsal folds. Then corneæ, anterior chambers, tension of eye, clearness or otherwise of aqueous, iris and pupil (iritis, synechiæ, etc.) and finally intraocular media. The writer has found considerable assistance from case record blanks which were prepared by him some years ago, and which will enable the examiner to note, with pencil, appearances as he goes along, and the location of pathological sequelæ.

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These were prepared for both eye and ear, and nose and throat cases, and a third schematic drawing of the fifth nerve serves to designate reflexes and other similar locations of changes so that briefly, concisely, clearly and without verbosity a reasonably clear diagnostic picture may be laid before the department. In examining certain chronic secreting eyes where there are to be found frequent relapses after the trachoma, or after granular disease has spent its course, especially if there is overplus of lachrymation and tears, the nose will be found oftentimes much to blame. Spurs on the septum, boring into the turbinate bodies, deviations of septum with broken-down anterior cartilaginous displacements, ampular thickening and enlargement of the septum near the middle, where the septum looks as if it were curved into both sides, old retension abscesses of septum, sinus disease, especially of ethmoid and frontal, or sphenoidal sinusitis, oftentimes aggravate and keep up for years a conjunctivitis which would otherwise get well. There is coming to be more and more recognized an inter-relationship between ocular and nose pathology particularly in and around the tear apparatus, conjunctiva, fifth nerve, e. g., adenoids, phlyctenular keratitis, etc., and many others. Nothing need be said here concerning posterior rhinoscopic examinations—these are done now so well by very many indeed of the general men, that no time need be consumed in this feature of the paper. It may not be unadvisable to speak of one symptom, however, which is oftentimes overlooked in these cases where claims are made on account of bronchitis, cough, etc., where we find contact pressure between the circumvallate papillæ on the back of the tongue and the edge of the epiglottis, the lingual tonsil, or "throat piles" as it is sometimes called. This in aged people is a frequent condition; and they have a hacking cough without much if any expectoration, and in many cases no rales whatever in the bronchi, or parenchymatous changes in the lungs.

A long uvula may or may not be present. Sometimes we find the uvula has been cut off, and at other times not. Usually the tonsils, the pharyngeal tonsils, have disappeared largely or entirely, unless it be in younger men, some of those from the last war, the War with Spain, because the tonsil largely disappears any way in the old.

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It has been the practice of the writer to follow out systematically the examination of the external structures of the eye, after the rough test of vision has been made as above indicated, and while this was going on to test the hearing by the voice in conversation while the applicant's attention was taken up with his eyes, and in this way divert him as much as possible, so that in mixed cases a general idea has been obtained before taking up formally the ear.

In considering the otological phase of the subject, "Hints to the General Board Surgeon," we come upon a problem at once beset with many difficulties. Fortunately it may be said that the proportion of the cases of alleged total deafness is small to the vast army of other disabilities. Nevertheless the problem of determining one-sided total deafness, or one-sided high degree of impairment of hearing with slight or sometimes serious deafness of the other ear is by no means an easy matter in the most careful hands. Here we have a field where much, if not all we have to work upon is largely dependent upon the subjective evidence and the 'say so' of the claimant. True there are many cases where the pathological evidence of loss of structure and loss of function without loss of tissue, comes to the aid of the examiner, and we may profit much by the consideration of hints along this line. A good light, a head mirror, with speculum, and syringe are absolutely essential; to this we may add, a large tuning-fork usually of the C scale note, a fairly loud ticking watch, and the human voice. Acouometers, Galton whistles, Koenig's rods, electric phonometers, etc., are scientific toys which cost money and while they are no doubt useful in certain cases, still they are special refinements which are not to be considered here.

It goes without saying that a clean external auditory canal is the first consideration. This can be always obtained. I say always because unless the canal be stenosed, or unusually highly curved (which we do find sometimes), or there be present exostoses, polypi, furunculosis, or actual pathological conditions in the canal itself, in which case they would go to that extent in the make up of the diagnosis and the disability—unless we find some of these conditions present, the removal of wax should not be so very difficult. Spoons,

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hooks, forks, gimblet probes and all such devices are undesirable things to use. One can do all that is necessary in ninety per cent. of the cases with a good strong syringe, which has a collar so that it may be used with one hand while the other holds up the pinna of the auricle so as to straighten out the canal, and a small angular forcep to pick up the ball of wax with after it has been loosened and comes forward. In throwing the stream of water, remember that what we want to do is to get the water *behind* the ball of wax, not squirt against it; hence pass at first gently along the sides, in front, below, back and above, and as soon as you get the knack of it and the patient gets accustomed to the warm water (it should always be warm), with a few good strong impulses against the piston of the syringe with the thumb it will usually loosen the wax and the pressure behind will drive it forwards. But if you squirt against the wax you can squirt all day, it will not move.

The drum head, we should remember, does not sit directly in front of us at right angles to the line of vision, but on a slant; that is, on a slant both ways. It slants from the front wall downwards toward the back wall. Moreover, the top of the drum head is nearer to us than the bottom. The irregular, knuckle shaped body we see near the center of the picture is the short process of the malleus, and corresponds to the articulation of the malleus with the incus, or malleo-incudal articulation, when viewed from the other side, that is, the tympanic or middle ear side of the drum. Reaching diagonally downwards and towards the back is a straight, rather white line, say half way, which is the handle of the malleus, and at the lower end of this is the apex of a glistening triangle which reaches to the lower wall and is called the "cone of light."

Now when the middle ear is too shallow as from retraction, the "knuckle" spoken of above is much more prominent, and the shadow of the malleus handle shorter, because it is foreshortened, or rather "back shortened," and usually in such a case the drum membrane instead of having a pinkish tinge, looks more like ashes, especially on the back, and the cone of light is much duller. You would expect to find in such case a narrow, possibly stenosed Eustachian

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tube. Here the Valsalva method should be first tried, then Politzer, and lastly catheterization.

By the catheter a soft blowing sound should be heard. Bubbling indicates fluid, fine wheezing, a narrow tube, but one marked, prominent feature to be remembered is, that when air goes into the drum, the operator hears the sound as though it were in his own ear. If the sound has a "far away" quality about it, the point of the catheter is in the pharynx, and no air is going into the Eustachian tube, or the tube is closed and the air cannot go in. In a perfectly normal drum, we have a very, very slight cluck to the sound.

In looking over the literature of the subject one is struck with the very conspicuous absence of any gratifying or reliable information on the subject of simulation or the manner of detecting malingering. Roosa (p. 18) devotes a paragraph, about a half page to the subject, Pomeroy (p. 41) gives about a line, Dalby nothing, Allen nothing, Toynbee nothing, Troeltsch nothing, Buck nothing except the statements of the patient or friends, Dench practically nothing, Burnett nothing specific other than the physical examination and the patient's word.

The last named author says: (p. 92, Vol. I) "No perfectly satisfactory tests of the hearing power have yet been devised, although a multitude of contrivances have been used. A difficulty which is found in testing the ears separately is that it is next to impossible to exclude the hearing from the other ear. With all tests it is well to have the eyes of the patient turned away or closed. The ear should be tested both for air and bone conduction. The comparison of the results of these two methods is supposed to throw a little light on the presence of conductive or perceptive disturbances. When by air conduction the sound is heard louder than by bone conduction the condition is either a normal one, or the trouble may be suspected in the perceptive apparatus. If on the other hand the sound is better heard by bone conduction, we may suspect derangement in the conducting apparatus or closure of the external meatus by wax, etc."

The electricians are also equally reticent on the subject of detecting simulation by means of the galvanic or other

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currents. Neftel, Althause, Scheppegrell, Rumbold, Beard and Rockwell, Brenner, all speak of the therapeutic action of electricity on the ear, notably the acoustic nerve, but none of them advise its use in testing the hearing power of the ear. In Roosa's work (loc. cit.) we find a method spoken of where he recommends the use of the binaural stethoscope after the manner of Dr. David Coggin. It is as follows.

"He plugs the right metal socket with a wooden stopper (the patient claiming to be deaf in the left ear). On using the stethoscope in this manner for hearing speech a person with good hearing power will find that he cannot distinguish it with the right ear. The person who claimed to be deaf in the left ear, was first tested while the tube of the right arm was plugged and it was found that he could hear a whisper in the thoracic cup which served as a mouthpiece. The tube containing the plug was then removed from the ear and the tragus was firmly pressed against the meatus so as to completely close it. Then the tube was applied to the left ear as before; the patient positively declared that he could not hear what Dr. Coggin said to him. He knew that the tube through which he *supposed* he heard before was no longer in the right ear."

In the Annals of Otology, 1898 (p. 309), Dr. Carl Biehl, of Vienna, describes a modification of this method which is much better although it does not do away with the objection urged above by Burnett, viz., that it does not exclude entirely the hearing of the other ear. This method will succeed in the case where the simulator is a palpable liar to begin with, but a shrewd diagnostician will have determined in all probability, by his knowledge of human nature, before resorting to this, much that will guide him in respect to his suspicions if the physical examination of the ear itself should contradict any claim to total deafness which may be set up on the part of the unwary patient, especially if he be an ignorant person. This method is as follows: The normal ear is first tested. Then, without the knowledge of the patient—and this is not easy to do—a piece of rubber tubing 2 or 3 cm. long, the width corresponding to the canal, is inserted as far as possible into the canal *of the normal ear.*

The examiner covers the eyes of the patient with one hand while the fingers of the other hand are used to play

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upon the open end of the tube so that the lumen is now open, now closed. Whispered words are then spoken by a person chosen who will increase or lessen the distance without allowing the patient to become aware of it; rubber soles or overshoes being worn by the observer. The rubber tube gives the feeling of complete closure (although it does not close the ear except when the lumen is closed by the examiner). If the fingers are skillfully worked even a wary person cannot continue to feign deafness. That he does feign is proven when he claims not to hear with the tube open.

This author states that "It is more difficult to test feigned deafness on both sides; and stratagem must be resorted to, but often the patient has so firm a will that all tests are useless and that such a person must be kept under surveillance" (loc. cit.). There are two other tests which should be mentioned and described before closing, and which, while they are not used especially in the detection of simulation, yet they are differential tests and inasmuch as reliance must be placed to some extent at least on the willingness of the patient to cooperate with the examiner and give the facts as they occur, are very useful if not the most useful we have at our command. Moreover they are tests which render valuable aid even in cases where attempts are made to deceive, and they are besides this, tests which every examiner can understand and apply, and they require little or no expense. I refer to the Weber test and the test of Rinne.

They are both based on the conductivity of sound through air, and the more exaggerated conductivity of sound through bone; one having application particularly to the tympanic end or the transmitting portion of the auditory apparatus, while the other has its application to the labyrinthine end or the acoustic, or in other words the perceptive side, the receiving apparatus, the semicircular canals, cochlea, organ of Corti, etc.

Weber found (Dench, p. 151) that when a tuning-fork, set in vibration, was placed on the skull, held between the teeth at the middle of the jaw, etc., and the meatus of one side was closed, the sound was heard more plainly in the closed ear. If the external ear therefore be closed with wax, if the continuity of union be severed or discontinued or if the

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transmissibility of the ossicular chain be hindered by loss of some of the parts or be constricted and bound together by ankylosis, or in other words if the vibrations be interfered with, the sound would be heard better in the bad ear. In other words bone conduction would be better in the poor ear if the disease were due to lesions of the conducting apparatus rather than to the internal ear.

"There is a source of error (Roosa, p. 52) in the use of the tuning-fork here which patients who do not possess fair habits of observation will fall into. They will sometimes say that they hear the tuning-fork better from the better ear, because they think that they *ought to* do so. Its chief value therefore is among persons who can be taught to observe what they actually hear, and who will allow their theoretical notions to remain in abeyance for a time." Care must always be taken in this test to place the fork equidistant from either ear. It will not do to allow either ear any advantage as to position, since we must remember that sound varies always inversely as the square of the distance, with regard to intensity. The other test is called Rinne (Dench, p. 152). Rinne was "the first to discover that while the normal ear perceived the vibrations of the tuning-fork louder by bone conduction than by air, yet it was heard about twice as long a time held before the canal as when the shank of the fork rested directly on the mastoid. In applying this method of investigation, then, if, in a given case in which the hearing is impaired the duration of bone conduction is greater than that of air conduction the inference would be that the impairment is in the conducting apparatus, and pathological conditions in the canal being excluded by physical examination, the location must of necessity be the tympanum."

In other words normal air conduction is longer than bone condution—e. g., place the end of the vibrating fork on the teeth, direct patient to indicate when he ceases to hear it, then bring it to the meatus; if it is heard again it is what we call "Rinne +." But if it is not heard at the meatus, or if it can be heard by placing it against the teeth after it ceases to be heard at the meatus we call that "Rinne —" and it indicates that the perceptive portion of the ear is affected. Then there is the Schwabach, and Weber-Schwabach test

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with high and low tones, which are still more complicated and are used to differentiate spongifying of the bony capsule and ankylosis of the stapes, which we must omit.

Much patience is always required with these cases. It has been the observation of the writer that kindness, gentleness, patience and a manifest desire to show these people due consideration, to take an interest in them, to endeavor to get at the truth, inculcates in them the desire to do likewise, and one is sometimes astonished at the moral effect, either from sheer exhaustion or from some other motive, in a patient. Repeated, apparently earnest yet kind, urging and solicitation on the part of the surgeon nearly always meets with its reward. These men are passing away; ere long they will all be gone. Cherish for them a kindly sympathy and while you exert every endeavor after the absolute truth let the evidence come not from the careless, superficial, hurried, indifferent act of a few moments wherein nothing is really discovered, but rather let a failure, if such must be the outcome, be the result of unrewarded zeal.

Discussion.

Dr. Farley, of New York:—I was very much interested in this paper, for it contained very many valuable hints. I will venture to make some suggestions on the same subject from my own experience. Where a claim is made for defective vision of one eye, one valuable and sufficient test is by the stereoscope with properly prepared cards. This will enable you to detect the capacity or incapacity of an alleged blind eye very readily. The apparatus is not expensive. For a dollar a good stereoscope can be obtained, and the cards one can prepare for himself, if necessary. There are various test cards which are entirely satisfactory and will settle the question at once. The simplest is one with the letter L on its left half and letter F on its right half. With normal binocular vision these two letters are combined and they appear as the single letter E. You watch the patient's eyes when he is using the stereoscope, to see that he keeps them both open and if he fails to distinguish the E, and calls it L or F, that settles the question at once with perfect certainty, it seems to me. That is one test which Dr. Stillson did not mention, but I think it is worth something.

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Testing for defects of one ear is certainly a very difficult matter in many cases where the claimant is a foxy sort of person. It is impossible to determine the exact degree of the existing defect, but you can generally form an opinion of what the claim amounts to. It seems to me that in most cases where there is a fair degree of hearing in one ear and very poor hearing in the other, the manner of the man will indicate that fact. You can do a great part of the examination informally. It is quite important to engage the man's attention upon other matters, get him interested in his other claims, or something of that kind, all the while making your own observations, and in that way you can form a pretty good judgment as to the merits of his claimed defects. If he claims defects in one ear, tell him to close his alleged good ear, and then question him while standing behind him. If he is a malingerer he will fail to answer you. You ask him "Have you your ear stopped tightly?" He will probably not answer that. Then you can say "That will do," and he will take his finger out of his ear at once. This method will succeed in a great many cases.

Dr. Stillson in his paper said that the use of a syringe and warm water was in all cases sufficient for the removal of a ball of wax from the ear. That has not been my experience. There are many cases which should be treated by other means. It is advisable where you have a number of applicants to examine on the same day who are claiming ear troubles, to look at them in the first instance before spending time upon other classes of applicants. Look at those men's ears, and if you find an accumulation of wax take the men aside, cause them to lie down, fill their ears with warm water and let them soak while the other examinations are made.

The President:—Do you keep them in that position?

Dr. Farley:—I let them lie there for ten or twenty minutes. That facilitates operations very much. But I must say to Dr. Stillson that I have seen cases where the syringe would fail altogether to remove the wax. I once removed what looked like a beetle from the ear of one applicant, and he said he could remember when he got it in; that it was about thirty years before, in the Wilderness. (Laughter.)

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DR. RIDER, of New York:— As an illustration, Mr. President, of what these meetings can do for us, I will state that at the last meeting at Saratoga I learned a little test from a surgeon, which is very simple, but it had never occurred to me before. That was to make a pretended test of the hearing by means of a watch, while the real test was being carried on by means of the voice, and I have employed that method ever since. I take out my watch and hold it at a ridiculous distance from the claimant and ask him if he can hear the watch tick, and converse with him about the matter—the result of the test being usually negative as to the watch but very gratifying as to conversation. The simplest way I know to unmask a malingerer who claims one poor ear is to ask him to leave his better ear unstopped. Then, speaking through the mouth-piece of a conversation tube with the tip in his poorer ear, I ask him "Do you hear what I say now?" Of course he may say "no." That is common. But he very frequently will remain silent. Yet we know very well that he hears well enough with his other ear. These things are so simple that very frequently they do not occur to us.

DR. STILLSON, of Indiana, (in concluding):—I do not know that there is very much to say except to thank the gentlemen of the Association for their patient attention to the paper which I was afraid was a little too long and had too much detail in it. However, I will reply to some of the suggestons which have been offered.

First, about the syringe. My object in writing this paper was to avoid the use, as far as possible, of any of the methods that are employed by specialists and persons of known skill in these departments, but more especially to lay down certain rules that would be for the guidance of gentlemen of the Association. That is why I insisted upon the use of the syringe and made it apparent that the syringe is an instrument with which we can do about all that we are justifiable in undertaking to do in removing a foreign body from the ear. I stand upon that. I admit that Dr. Farley is right in allowing the patients to have a little time to soak the wax of their ears in water, and hence you can use a syringe during office hours, and if at first you don't succeed,

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keep on sucking until you do succeed. (Laughter.) But the point I wished to bring out was not to throw the water against the ball of wax; that is liable to be practiced by assistants, students and the laity. Get the warm water, if possible, in behind the ball of wax, and that will loosen it.

Another thing, as to the character of the syringe. Never use a glass syringe. Always have a good aural syringe with a neck and collar to it, so as to get the water behind the ball of wax. In that way I say in 90 per cent. of the cases you will probably succeed.

This watch trick I have employed for four or five years, but I operate a little differently from the way Dr. Rider has described it. Instead of employing the gum shoe method, I do just the opposite. I stand off and say to the patient "Now can you hear the watch?" He makes no reply. Then I say "You must answer one way or the other; you must say you do or do not, because I am required to note these distances," Then I take certain measurements, and I come closer and say in an ordinary tone "Now say whether you do or do not," and he will say "I do not." (Laughter.) Then I proceed to test each ear separately, according to the instructions. I tell the patient to put his finger in his left ear, and then to close his eyes. Invariably he obeys. Then I say "Now do you hear the watch?" He answers " I do not." "Now do you hear the watch?" "I do," he says, or "I do not," as the case may be. But in the meantime I have approached within the required distance and spoken with a natural tone of the voice. So with the other ear.

But I regard the tuning-fork test as very valuable in detecting these cases, for the simple reason that it gives us at once a clue as to the probable origin of the deficiency of hearing, as to whether it is due to the drum or due to the nerve. I speak of the drum as the middle ear, including the chain of bones. The normal air conduction should be longer than the bone conduction, and naturally the tuning-fork should be heard longer in front of the normal ear than when placed on the bone.

I thank you very much, gentlemen. (Applause.)

Dr. Lewis, of the Bureau of Pensions:—I should like to ask Dr. Stillson whether he uses pure water in dissolving the

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wax, or does he add soda to the water—whether the use of soda will not materially assist in dissolving the wax.

DR. STILLSON:—I use borax.

DR. LEWIS:—One other question: How many cases of defects do you find where there is perfect freedom from pus in nasal catarrh, or rather, the absence of some growth? Does not that help materially in the diagnosis?

DR. STILLSON:—Oh, certainly. That is the reason I prepared these blanks. I always bring that in as part, even if the hearing is only slightly impaired. I regard that as important. I think that almost any modern physician in general practice will get a fair idea of the nasal condition. You want a good post-nasal mirror and speculum. My rule always is to examine the nose even before I test the hearing and during the time I am conversing with the man all the time.

While not exactly pertinent to the questions which have been put, there is a point which was brought up yesterday, I think, in one of the papers, or during the discussions, in regard to post-nasal catarrh—that you very frequently find persons who have this condition of stenosis and yet claim never to have had catarrh. During this very week I had a patient come to me whose naso-pharynx was in rather bad condition, and yet he stoutly insisted that he had never had nasal catarrh. There are cases where there are these deviations of the septum, this narrowing of the air passages, and still they claim no catarrh. So we must not take their 'say so' altogether, though I am always willing to give and do give due credit to the claimant for what he says are his nasal conditions. That is why I have those blanks which, when filled out, will help to give a clearer picture of the clinical appearance of the case.

DR. GLIDDEN, of New York:—It is not my purpose to discuss this paper, but it struck me that it might be very useful to know how frequently examiners find adenoid growths when examining old soldiers. It has been my experience that adenoid growths are quite common in youth, but not after middle life.

I would like also to make one suggestion. This is somewhat out of my line, but I have been in the habit of using

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in my office, to remove the wax from the ear a solution of hydrogen dioxide and have found it very useful.

DR. STILLSON:—Dr. Glidden is right about that question of adenoids. It is a disease of youth up to middle life. We very seldom find the large tonsils, but still there are such cases, where adenoids exist later in life.

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Insanity as a Sequel to Physical Conditions.*

BY

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THE title of this paper is, in one sense, without significance, as all forms of mental disorder are in reality the result of physical disease. In this connection, however, it is used to distinguish such cases and forms of disturbance of the mind as follow pre-existing physical conditions in the relation of sequelæ, and the effort will be made to show as far as possible the distinguishing characteristics of such mental disorder, and to point out the nature of the relationship which may be traced between such mind disease and pre-existing bodily conditions.

To do so it will be necessary first to review briefly the manner in which insanity in general develops from physical states and diseases.

To a greater extent, perhaps, than in any other form of disease, it must be conceded that the determining factor in the causation of diseases of the mind is a peculiarity of physical structure, either congenital or developed usually during the period preceding the age of full development. As this peculiarity is one inimical to the safety of the organization and such as increases its susceptibility to disorder and decay, it must be considered a defect. It may be, first, an actual brain deficiency, such as results in the varying degrees of imbecility. All persons mentally defective from imperfect development or congenital, physical deficiency are more susceptible to acute attacks of active insanity in later years.

* Read by invitation.

† Died at Washington, D. C., on June 27, 1908.

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A second class of more than usually susceptible individuals, as far as liability to subsequent insanity is concerned, is that class who are structurally out of balance; those in whom, while their organization may not disclose any actual deficiency in any part, there is not a proper relative development of the different parts. No part is actually deficient, perhaps, but some portions are developed to a greater extent than others. This irregular development may or may not be inimical to the safety of the organization as a whole. When not prejudicial it is often of great advantage and lays a foundation for unusual capacity in special directions, is, in other words, the basis of extraordinary expenditure of energy not inconsistent with the safety of the entire structure. Of such structure, for instance, an Edison is made. His organization is evidently out of balance, as compared with average development. His capacity is greatly enlarged in certain particulars, without doubt because of over-development, or unusually full development of certain portions of his physical basis, which, however, is neither at the expense of any other portion essential to safe preservation, nor of a character itself which leads to any serious danger to the structure as a whole. Therefore it permits extraordinary and long continued expenditure of energy in certain directions without resulting in any serious derangement of the entire mechanism. It is true, perhaps, that in such a person the general development is also above the usual.

In still others, the unusual development in special direction, the want of balance, approaches the danger line without crossing it. Such an organization, for instance, had Charles Lamb and De Quincey, both of great capacity in special lines, but in whom this development was dangerously near the point at which its existence would prove incompatible with the safety of the entire organization. There are many such individuals and the danger comes from numerous directions. In still another class there is such an unusual development in special directions, or this special development is of such character, or so far out of balance with other parts, that is, other parts are so relatively weak, that the result is destruction of the mechanism as a whole. There may be great

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capacity in some special direction, and this may result in marvelous expenditure of energy, but it is not coupled with the necessary adjustment to the other portions to ensure their safe perpetuation and as a result the whole is sacrificed. May we not cite the great Napoleon as an instance? Not that he was insane, but that he illustrates the sacrifice of elements in his organization essential to its safe perpetuation, to an extraordinary development of capacity in special lines. Was he not, too, so defective in reason and so carried away by his marvelous capacity, so warped and biased in judgment as to be incapable of discerning his inevitable destruction, the certain and speedy termination of his career? Of such, too, are the many meteoric careers which continually flash out before us, leaving a glittering pathway for a few short years, but burning themselves out in swift and certain extinction.

To come down now to the more matter of fact conditions of every day life and ordinary states of existence, it may be said that the dangers which come to the individual of common mold and of not unusual type, have their origin in most instances in an inability or unwillingness of the individual to properly estimate his own capacity, to discover his deficiencies and to properly adjust his expenditure of energy within safe limits, or to properly safeguard himself from his inherent deficiencies. Many are the individuals who go to mental and physical destruction simply because they do not or cannot safely adjust themselves to their safe limits nor properly protect themselves from the defects that lie inherent in their organization. A given machine can produce safely only a given amount of power. It is a law of nature that there must be a "quid pro quo." For a given result a certain mechanism is required. For a certain expenditure of energy a particular group of conditions is necessary. There must be a machine of certain capacity and type and it must be supplied with a certain amount of energy producing elements.

Such, then, are the conditions under which we all must work. Can we discover how danger comes and can we determine when the danger signals are present, and when present can we point them out? When actual disorder comes

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can we recognize its character? Such are some of the problems that ask solution of him who would become a student of alienism.

Insanity develops either from causes chiefly inherited, congenital or otherwise occurring during the developmental period and usually described as predisposing, exciting causes being quite subordinate or practically absent; or from such exciting causes chiefly, the predisposition being less evident and these causes less potent.

Let us review the former class of cases first. Such cases are quite numerous and usually have significant characteristics. They develop very slowly and insidiously. It often requires years to fully establish an evident state of insanity. Such persons almost invariably show marked peculiarities in their history. They are usually suspicious or morose, or inclined to keep to themselves. They may be irritable or emotional or may show lack of usual control of themselves in some direction. As time goes on the peculiarities become more marked. The epochal periods of life in such persons are fraught with danger. The form which the resulting insanity assumes is usually an exaggeration of these pre-existing peculiarities. The suspicious person becomes still more suspicious, the morose or irritable man, still more morose or irritable, until finally fixed delusions of suspicion or persecution result. The emotional person becomes still more eccentric and unstable until an acute attack of mental excitement ensues. A person, by nature deeply religious or with hypersensitive conscience, gradually becomes actually morbid on the subject of his religious duties or his relations to his fellows and delusions of a religious character are gradually evolved. He believes his soul is lost, that he has committed the unpardonable sin or he conjures up some trivial offense in his early history and greatly magnifies it until it becomes to him an offense beyond hope of pardon. A person by nature moody and inclined to look on the dark side of things in general gradually worries more and more over matters about him until there is finally developed an actual condition of melancholia. A person who is constantly fearful of his health, always taking medicine or consulting his physician, magnifies more and more the suspected symptoms

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of disease in his body until finally a state of actual hypochondriacal melancholia develops. All such cases are usually accompanied by delusions of a fixed character.

Another class is those in whom there has been a defect, usually inherited or congenital, that does not become particularly evident until the period of pubescence or adolescence arrives. The added strain of this period of development then proves too great and the brain elements begin to show an early decay or are thrown into acute disorder. The individual becomes less capable, he cannot do his tasks with average capacity, loses interest in things about him, becomes gradually more and more foolish in his actions, gives way to such propensities as masturbation, and shows generally more and more mental weakness. Such are typical cases of primary dementia.

Instead of this gradual and progressive mental weakness, the age of puberty or adolescence may develop sharp and acute attacks of emotional excitement, acute mania with much emotional disturbance and rather rapidly developing signs of mental weakness. Delusions in all such cases are not frequent and the dominating characteristic is mental weakness or dementia.

The preceding classes comprise a very considerable number of the cases of insanity occurring in any community. You can readily appreciate that a careful study of the previous history of the patient is very important. The relatives of the insane are prone to keep in the background all evidence of inherited defects and all signs of peculiar or anomalous conduct preceding the established disease. They very much prefer to have it ascribed to some exciting cause, an acute illness of some kind or a trivial injury in childhood. In reviewing the development and causation of any case of insanity it is always important to look beyond the ascribed causes, given as exciting, to the previous history of the person. You will often find much in it to explain what is otherwise inexplicable in an evident want of relation between the disease as you see it and the trivial causes to which it has been ascribed.

Taking up now the second class of cases, those in whom the insanity is due chiefly to acute exciting causes, and

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where there is less evidence of any pre-existing defect or peculiarity of structure, the problem of tracing the relation between the form of disease and its exciting causes, and of outlining any laws of development by which the reasonableness or unreasonableness of its existence in connection with such causes as may be claimed to have developed, it may be judged, becomes much more intricate and difficult of solution.

Let us first consider such cases as arise from the general class of exciting causes of a traumatic character. With these we should also include insolation or sunstroke, especially when caused by direct heat of the sun on the head rather than by simple over-heating.

Traumatic causes in general may be divided into two classes, those that produce evident physical injury to the brain or its membranes, or serious injury to other portions of the nervous system or of the body in general, and secondly those which result only in shock without any or with very slight actual or evident injury to any part of the bodily structure. Taking the latter first, it may be said that, generally speaking, the effect of shock from traumatic causes, unaccompanied by actual physical injury, is to produce a chain of symptoms which may be described as neuroses rather than psychoses. At most the two are intermingled. The symptoms are usually those of general nervousness, tremor, more or less marked motor or sensory disturbance, notably the latter, often decided deterioration of the general health, insomnia, and loss of appetite and of bodily weight. There is usually great increase in the influence of the *ego*, the patient's attention is concentrated on his injury and on himself. He is inclined to be despondent and emotional and exaggerates all his symptoms. If actual insanity develops it is likely to assume the form of melancholia, and of the hypochondriacal type. Many of these cases are complicated by prospective damage suits and the prompt settlement of such suits is often the surest way to modify favorably the disturbance, this too in cases where the disposition to malinger is not to be assumed. If present, the disposition to deceive may be unconscious to the individual.

In traumatic cases where there has been actual injury to the brain or its meninges, including sunstroke, there may

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be mental disturbance as the direct result and accompanying meningitis or cerebritis as a delirium or there may be an immediate delirium or confusion of mind as a primary shock. This delirium may pass away with the subsidence of the inflammation and the mental confusion disappear with the disappearance of the shock, or the brain may as a result receive a permanent injury which is accompanied by permanent mental disorder dating from the injury or very soon thereafter. This mental disorder may be quite varied in character. It may be shown only in marked change in character. Cases are on record in which complete change in moral characteristics has dated from injury of such character. Usually this change is deteriorating in nature. Insanity with fixed delusions, I have known to follow injury to the head, and continue for years, the autopsy finally developing general pachymeningitis externa, without evidence of fracture of the skull, but with complete adhesion of the dura to the skull throughout. The delusions in this case were of a pleasant character and there was marked mental deterioration. In still another case, I have known injury to the head, without evident fracture of the skull, to be followed at once or soon thereafter by profound dementia, persistent and lasting for years. In some instances I have known such a condition as alcoholism to be attributed to head injury, the change in habits following directly after the injury and being marked in character. I believe some such cases are correctly attributed to such cause. Injury to the head, as you know, is a not infrequent cause of epilepsy and the epileptic attacks may begin within a very few days, or hours even, of the injury. The mental deterioration resulting, in such cases, does not, in my experience, differ materially from the mental deterioration following epilepsy from any other cause.

Mental disorder that results from traumatic causes, where there has been evident injury to the brain or its membranes, but which arises months or years after the injury, and when there was little or no mental disturbance at the time of the injury, may be of very varied character. I believe in most such cases, however, there will be found some indications of brain disturbance in the interim. The indi-

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vidual has frequent or severe headaches, he is not the same man that he was before the injury, or he finds he cannot perform the same amount of work without feeling the effect of it in some injurious manner. Where many years have elapsed with no symptoms of injury to the brain in the meantime, I should hesitate to ascribe the injury as a cause of any mental disorder that might develop after such length of time. When it does develop after a considerable lapse of time and when indications point to a causal relationship, I know of nothing in the character or form of the mental disease that would indicate a probable origin from such cause. The absence of any other sufficient exciting cause and the absence of any marked defect or peculiarity in the person previous to the injury, of course, tends to prove the causal relationship of the injury itself.

Turning next to the influence of acute diseases in developing insanity, the three classes which are of chief importance may be grouped as follows: first, conditions producing acute exhaustion, second, conditions due to acute infections, and third, those which are the result of various forms of intoxication, either acute or more prolonged.

The form of insanity which usually results from acute exhaustion is that of simple confusion of mind or of depression. Occasionally there is a sudden outbreak of excitement. All these forms are simple in character, develop more or less rapidly and immediately from the exciting cause and in uncomplicated cases, tend toward recovery under conditions insuring rest, sleep and proper nutrition. If recovery does not ensue it is usually because of the natural instability or defect of the nervous system. In such cases more unfavorable forms of insanity may develop from this class of causes, accompanied by systematized delusions, hallucinations of hearing or sight, or greater or less dementia or mental weakness.

In the milder forms of mental disorder resulting from infections, such as fevers, we find similar types of the disease. There is usually either confusion of mind, mental hebetude, lethargy or states of depression. Less often greater or less excitement and occasionally decidedly acute mania may result. If the infection has been extreme in

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degree there may result more decided conditions of brain deterioration, resulting in dementia, fixed delusions, or dominant and fixed ideas. I have frequently seen cases of permanent insanity resulting from such causes when the brain seemed to be completely burned out, so to speak, by the intensity of the infectious process. These infections may be of auto-toxic origin, the condition resulting from the influence of retained excretion of some character. In all this class of cases, too, the natural predisposition of the nervous system may greatly influence the form of mental disease and also the prognosis. Where this predisposition is marked the forms of insanity resulting are accompanied by more evident deterioration. There are pronounced perversions, such as fixed delusions, hallucinations or a greater or less degree of dementia.

The third class of causes, viz., intoxication, produces a numerous variety of forms of mental disorder, from simple alcoholic intoxication to paresis, epileptic mania or such as result from arterio-sclerosis. The usual cases of this character are the result of alcohol, opium or cocaine. The limits of this paper will not admit a full description of all the forms which may result from these. They constitute a very discouraging group. This is largely due to the fact that back of the development of the drug or alcoholic habit, is the existence of marked instability of nervous tissue. It is not hard to remove the immediate effect of the intoxication, and to restore an apparently normal state of mind, but the instability is so extreme, the original defect is so marked, that relapse occurs whenever the restrictions of treatment are removed. The permanent forms of mental disorder that result from these causes are usually marked by numerous and more or less fixed hallucinations or delusions, often persecutory in character. Paresis, while occasionally the result of alcoholic excess, is far more frequently caused by syphilitic infection, some authorities going so far as to say that it is always the result of syphilis. Certainly there is a history of syphilis in not less than 75 per cent. of the cases. When there are evidences of organic brain disease resulting from alcohol or drug habit, such as paralysis, motor paresis, sensory disturbances, or disorder of the special senses, the insanity

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that accompanies the disturbance is almost invariably persistent and of organic character, accompanied by marked mental deterioration, and is progressive.

In conclusion, it may be said that in the determination of the probable origin of a given form and degree of mental disease and the reasonableness of its development from an assigned cause, there are a few points which should always be kept in mind. The first is, how much influence had original and natural defect or nervous instability in the development of the conditions found. The second is, do the assigned exciting causes bear a reasonable relation to the form of mental disease existing. The third is, can you exclude all other causes that might more probably produce the same condition.

You will naturally infer that the capacity to make a safe deduction from a given group of facts comes only from a long and varied experience and careful study of the insane. No other disease is so varied in its symptomatology and in no other disease is it more difficult to trace back the symptoms existing to their true origin.

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